

CA20N

Z1

-83H021



Ontario

ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN AND
RELATED MATTERS.

Hearing held
8th floor
180 Dundas Street West
Toronto, Ontario

The Honourable Mr. Justice S.G.M. Grange

P.S.A. Lamek, Q.C.

E.A. Cronk

Thomas Millar

Commissioner

Counsel

Associate Counsel

Administrator

Transcript of evidence
for

January 24, 1984

VOLUME 91

OFFICIAL COURT REPORTERS

Angus, Stonehouse & Co. Ltd.,
14 Carlton Street, 7th Floor,
Toronto, Ontario M5B 1J2

595-1065

91

in ch. (cont'd)

X Hunt

Ontved

Symes

Knauman

Olsh



ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN
AND RELATED MATTERS.

Hearing held on the 8th Floor,
180 Dundas Street West, Toronto,
Ontario, on Tuesday, the 24th
day of January, 1984.

- - - - -

THE HONOURABLE MR. JUSTICE S.G.M. GRANGE - Commissioner
THOMAS MILLAR - Administrator
MURRAY R. ELLIOT - Registrar

- - - - -

APPEARANCES:

P.S.A. LAMEK, Q.C.)	Commission Counsel
E. CRONK)	
D. HUNT)	Counsel for the Attorney
L. CECCHETTO)	General and Solicitor General
	of Ontario (Crown Attorneys
	and Coroner's Office)
M. THOMSON)	Counsel for The Hospital
R. BATTY)	for Sick Children
D. YOUNG	Counsel for The Metropolitan
	Toronto Police
W. N. ORTVED	Counsel for numerous Doctors
	at The Hospital for Sick
	Children
B. SYMES	Counsel for the Registered
	Nurses' Association of Ontario
	and 35 Registered Nurses at
	The Hospital for Sick Children
H. SOLOMON	Counsel for The Ontario
	Registered Nursing Assistants
D. BROWN	Counsel for Susan Nelles -
	Nurse

(Cont'd)...



Digitized by the Internet Archive
in 2023 with funding from
University of Toronto

<https://archive.org/details/31761118500651>



APPEARANCES:

E. FORSTER	Counsel for Phyllis Trayner - Nurse
J. A. OLAH	Counsel for Janet Brownless - R.N.A.
B. KNAZAN	Counsel for Mrs. M. Christie - R.N.A.
S. LABOW	Counsel for Mr. & Mrs. Gosselin, Mr. & Mrs. Gionas, Mr. & Mrs. Inwood, Mr. & Mrs. Turner, Mr. & Mrs. Lutes and Mr. & Mrs. Murphy (Parents of deceased children)
F. J. SHANAHAN	Counsel for Mr. & Mrs. Dominic Lombardo (parents of deceased child Stephanie Lombardo); and Heather Dawson (mother of deceased child Amber Dawson)
W. W. TOBIAS	Counsel of Mr. & Mrs. Hines (parents of deceased child Jordan Hines)
J. SHINEHOFT	Counsel for Lorie Pacsai and Kevin Garnet (parents of deceased child Kevin Pacsai)
V. NESLUND	Counsel for Dr. Buehler



INDEX OF WITNESSES

<u>NAME</u>	<u>Page No.</u>
<u>SMITH</u> , Dr. Lesbia F., (Resumed)	395
<u>BUEHLER</u> , Dr. James Walter (Resumed)	395
<u>WALLACE</u> , Dr. Evelyn MacKenzie (Resumed)	395
<u>KUSIAK</u> , Robert (Resumed)	395
Direct Examination by Mr. Lamek (Cont'd)	398
Cross-Examination by Mr. Hunt	419
Cross-Examination by Mr. Ortved	440 437
Cross-Examination by Ms. Symes	467
Cross-Examination by Mr. Knazan	573
Cross-Examination by Mr. Olah	602

INDEX OF EXHIBITS

<u>No.</u>	<u>Description</u>	<u>Page No.</u>
328	Review by Drs. Haynes and Taylor.	421



--- Upon commencing at 10:00 a.m.

<u>DR. LESBIA F. SMITH,</u>	Resumed
<u>DR. JAMES WALTER BUEHLER,</u>	Resumed
<u>DR. EVELYN MacKENZIE WALLACE,</u>	Resumed
<u>MR. ROBERT KUSIAK,</u>	Resumed

THE COMMISSIONER: Yes, Mr. Young?

MR. YOUNG: Mr. Commissioner,
before Mr. Lamek begins this morning I had
indicated yesterday that I might be prepared to
cross-examine today. I spoke to Mr. Percival last
night and in effect he wants to do this cross-
examination.

I would ask your indulgence.
Mr. Percival today is in front of the Court of
Appeal and tomorrow has a jury trial in front of
Mr. Justice O'Leary.

He will do his best to be here
Thursday and if in fact the panel is still here
on Monday he certainly could be here then.

THE COMMISSIONER: Well --

MR. YOUNG: I wonder if I might
ask that we be put down the list, on this morning's
list.

THE COMMISSIONER: Everybody wants
to be put down the list on this one, but we will
just - I think all we can do, Mr. Young, is see



1
2 what happens. Certainly I will take that into
3 consideration.

4 Mr. Labow, would you be prepared to
5 go on, at least tomorrow?

6 MR. LABOW: I could try,
7 Mr. Commissioner.

8 THE COMMISSIONER: Mr. Tobias?

9 MR. TOBIAS: With respect to
10 tomorrow I see no difficulty. I would see some
11 difficulty going on today.

12 THE COMMISSIONER: Well, I don't
13 think we will reach you today. I may be wrong.

14 MR. TOBIAS: I had anticipated
15 that I would be called on tomorrow.

16 THE COMMISSIONER: Yes.

17 MR. TOBIAS: So I am prepared to
18 go on tomorrow.

19 THE COMMISSIONER: There is going
20 to be a problem and all I ask is that people
21 co-operate because some counsel are not available
22 certain days. Some counsel wish to go on later,
23 and with justice, so we will make arrangements,
24 but today at any rate we have available --

25 MR. TOBIAS: You know in the
crunch, Mr. Commissioner, you can count on me. I



1

2

wouldn't let you down.

3

4

THE COMMISSIONER: I am delighted
to hear that.

5

6

7

At any rate we have Mr. Hunt who is
available to go on today and Mr. Ortved, are you
available to go on today?

8

9

MR. ORTVED: Yes. I don't promise
Mr. Tobias that I am going to be that much assistance
to him.

10

11

12

THE COMMISSIONER: No. And,
Miss Symes - well, she is not here yet, but when
she comes...

13

And Mr. Knazan, you are available?

14

MR. KNAZAN: Yes.

15

16

THE COMMISSIONER: Mr. Olah? That
may well keep us for today and that may solve some
of the problem.

17

18

19

20

21

Then tomorrow, Mr. Scott or
Mr. Roland will go on for some time I suspect and
with the parents we may well be able to hold it
over until Thursday and in fact there may be no
problem at all.

22

MR. YOUNG: Thank you,
Mr. Commissioner.

23

24

25

THE COMMISSIONER: But if there is



1
2 we will just have to deal with it.

3 MR. LAMEK: I think Mr. Sopinka is
4 available tomorrow, is he not?

5 THE COMMISSIONER: Yes, that is
6 right. Mr. Sopinka comes in tomorrow and Mr. Scott
7 and I am sure they will keep us entertained for the
8 day.

9 MR. LAMEK: I guess I am the only
10 person who is not allowed to ask to be stood down
11 in the order of things.

12 THE COMMISSIONER: You are not.

13 MR. LAMEK: I feel very discriminated
14 against.

15 THE COMMISSIONER: You are not
16 alone. Miss Cronk gets discriminated against from
17 time to time too.

18 Yes, all right now.

19 MR. LAMEK: Thank you.

20 DIRECT EXAMINATION BY MR. LAMEK: (Continued)

21 Q. A couple of things, please,
22 before we go on from the point which we had reached
23 in the report yesterday.

24 And first, Dr. Smith, you gave
25 evidence yesterday about, among other things, the
delivery of the pathology report of Dr. deSa to the



1
2 Hospital, and you have told me that your memory
3 betrayed you yesterday and indeed overnight you
4 have checked the sequence of things and it is
5 appropriate I think to clarify just what did happen
6 with respect to the deSa Report and indeed the
7 total report.

8 Could you help us with that, please?

9 (ANSWERS BY DR. SMITH)

10 A. Yes, a meeting was held on
11 Thursday, March 3rd, 1983. I believe this meeting
12 was called by the Hospital, and it was a meeting
13 of Hospital representatives and representatives of
14 the Attorney General's Office and the Ministry of
15 Health and the Crown Attorney and so on.

16 The intention at that meeting was
17 for us to give them the complete report, both the
18 epidemiologic study and the pathology report.
19 However, it was asked of the Hospital that confi-
20 dentiality be maintained on the whole report.

21 The Hospital representatives stated
22 that they could not ensure confidentiality. There-
23 fore they would not be prepared to receive the
24 report at that time.

25 We then said that we would give them
the pathology section of the report, and the



1 (ANSWERS BY DR. SMITH)

2 question arose as to the existence of two separate
3 reports, and therefore since this might create some
4 ambiguity as to the existence of two reports and so
5 on, the Hospital declined to accept either report
6 and it was from that moment on that the report was
7 officially not given to them.

8 Q. I see. The Hospital very
9 properly and understandably said if we can't
10 guarantee that we can comply with your requirement
11 of confidentiality we would rather not have it,
12 thank you very much.

13 A. That is correct.

14 Q. And to avoid any possible
15 confusion and ambiguity about our having one and
16 not the other we prefer not to have either.

17 A. That is correct.

18 Q. All right, thank you.

19 And the second, Dr. Buehler, you
20 have looked at part of the transcript of yesterday's
21 proceedings, and in particular page 212 of the
22 transcript. There is something there which you
23 think to be perhaps a little unclear and you would
24 prefer to clarify it. Once again it involves
25 information provided to the Hospital.

The question on page 212 at line 7 was:



1
2
3 "Q. And to the extent that
4 Dr. Carver may not thitherto have
5 been aware of them, did you on
6 February 16th disclose to him the
7 conclusions at which you had arrived
8 in your report?

9 A. Dr. Carver knew that we had
10 detected an increase in mortality
11 rates at the Hospital. He was
12 earlier aware of the finding concerning
13 associations between members of the
14 Hospital staff and certain deaths.
15 He was never given the particular
16 details of that, only in a general
17 sense."

18 I understand you think the last
19 sentence rather confuses the preceding parts of
20 the answer. Could you clarify for us, please,
21 what it was that Dr. Carver knew?

22 (ANSWERS BY DR. BUEHLER)

23 A. The answer as I stated is
24 correct but I felt there was ambiguity in how that
25 might be interpreted. We had earlier - "we" being
myself and several other members of the investigating
team not including Dr. Heath - had met with Dr. Carver



(ANSWERS BY DR. BUEHLER)

and had told him of our preliminary findings with respect to nurses.

He was aware of the finding concerning associations between members of the Hospital staff and certain deaths, meaning that he was aware of which particular nurse was associated with those deaths. He was never given the particular details of that only in a general sense meaning that we did not tell him which particular deaths were--that we were particularly concerned with.

Obviously he knew that there were certain deaths that were under consideration and in a general sense we said of those deaths where there was concern he was aware which nurse was associated with them but not which particular death.

Q. All right. So the proposition he was never given the particular details refers to the listing of the deaths which there was some suspicion, not to the finding of the association between one particular nurse and all of those deaths?

A. That is correct. And the issue of which nurse was associated with deaths was not discussed; at least that particular finding was not discussed on the meeting of February 16th.



(ANSWERS BY DR. BUEHLER)

Q. The nurse was identified to
Dr. Carver?

A. Earlier.

Q. All right. Now we had reached
page 21 of the report yesterday and had dealt with
the passage which considered and established the
associations between deaths and Hospital personnel.
Half way down page 21 the report deals with another
situation which is strictly speaking outside the
terms of reference of this Royal Commission.

I think perhaps we should explain
briefly what you did with respect to the investiga-
tion of a number of cardiac deaths in the summer of
1982.

Could you outline for us briefly,
please, what that was about?

A. Later on in the investigation
Dr. Carver asked us to look in detail at deaths
which occurred outside of the period we were
investigating. The reason for his request was that
the Hospital had detected an increase in the number
of children presenting to the Pathology Department
for autopsy with heart disease, and they were
interested in us looking at those deaths using a



(ANSWERS BY DR. BUEHLER)

similar approach that we had earlier used.

We state at the bottom of the "Methods" paragraph there:

"Analysis of these data permitted us to develop and test a practical approach for ongoing surveillance and evaluation of hospital patient mortality patterns."

In fact if you look at the results we didn't pursue that completely. We did, however, look at all of the deaths under consideration and we did look at where they occurred, if deaths occurred in the ICU where they came from, et cetera, and we found no similar clustering effect with respect to time or place that we had observed in the July 1980 to March 1981 period.

We did not pursue that investigation further. I think there were a number of reasons why the deaths during this period differ from the deaths during the other periods.

Q. Did you in fact determine whether there had been an epidemic of deaths in the summer of 1982?

A. We only looked at mortality



(ANSWERS BY DR. BUEHLER)

rates for July, August, September as part of the figure that you see in Figure 3. If you look at Figure 3 you will see that the last two points in that curve include the period July, August, September, 1982, but judging from that alone I cannot tell you if there was an epidemic in the Hospital at that time.

Q. Well, was it your conclusion that whether or not there had been an epidemic at that time it did not have the characteristics that you had observed about the 1980-81 epidemic? That is to say it did not appear to be ward specific and the deaths did not appear to cluster with respect to time of day in the way that they did in the 1980-81 period?

A. That is correct.



B
DM/PS

1

2

(ANSWERS BY DR. BUEHLER:)

3

4

5

Q. And were you satisfied that the summer of '82 did not produce resurgence of the situation which you had been investigating with respect to 1980 and 1981?

6

7

A. We felt it wasn't indicated in terms of what we were trying to do.

8

9

10

Q. It didn't appear to be of the same pattern as the situation you were dealing with?

11

A. That is correct.

12

13

14

Q. Does it follow then that from anything of which you are aware the epidemic that you were called in to investigate ended with the death of Justin Cook on March 22nd, 1981?

15

16

A. Again I would refer to figure 3.

17

Q. Yes.

18

19

20

21

A. The epidemic clearly ends with that last peak in the curve that you see, that represents the period January, February, March, 1981 and it ends at March, 1981. I believe that Justin Cook was the last child who died in March, 1981.

22

23

24

25

Q. Were you then in your report on pages 22 and the following pages summarizing



1 (ANSWERS BY DR. BUEHLER:)

2 your findings, and I don't intend to go through
3 the exercise of having you restate it even in
4 summary form, everything you were talking about
5 during the course of that. I do have just a couple
6 of questions, and I will take you to paragraph
7 numbered 1, "Mortality Rates", the second sentence,
8 you say:

9 "This increase was due primarily to
10 deaths on wards 4A, and it largely
11 occurred (25 of 36 deaths) during the
12 early morning, midnight to 0600 hours."

13 As I recall it, on page 14 you said there were 26
14 such deaths. I don't know whether a huge amount
15 may turn on it.

16 A. Let me check something very
17 quickly.

18 Q. I am looking at page 14:

19 "Time of onset of terminal events
20 (reference time) and time of death for
21 26 of 36 epidemic-period deaths.
22 The reference time was between 0400
23 hours and 0600 hours..."

24 A. Yes, if you read the next
25 sentence it says:

"A similar clustering was observed



1 (ANSWERS BY DR. BUEHLER:)

2 for time of death. For 25 of 36
3 epidemic-period deaths compared to
4 1 of 20 non-epidemic deaths, deaths
5 occurred between 0000 and 0600 hours."

6 Q. Okay.

7 A. So that is the explanation for
8 that.

9 Q. We are talking about different
10 events.

11 A. Yes, reference time as opposed
12 to death time.

13 Q. All right. In the case of 26
14 then there was onset of terminal events between
15 midnight and 6 a.m., and of those 26, 25 died within
16 that time frame.

17 A. That is correct.

18 Q. Page 23, the first full para-
19 graph, "Consultant Cardiologist."

20 THE COMMISSIONER: Page 20?

21 MR. LAMEK: Page 23, Mr. Commissioner.

22 THE COMMISSIONER: Thank you.

23 MR. LAMEK: Q. In terms of trying to
24 discern an explanation for the epidemic that you
25 have identified, might this be regarded as what I
call a key finding, that is to say, that it appears



(ANSWERS BY DR. BUEHLER)

to indicate that regardless of whether the general ward population in the epidemic period was more severely ill than in other periods, those who died in the epidemic period were generally less severely ill than those who died in other periods, is that the finding?

A. That is correct.

Q. Does that suggest the severity of illness in the epidemic period over all ward population doesn't appear to account for the increase in mortality, does that follow from that finding?

A. I think there is some ambiguity about the problem we mentioned yesterday.

Q. Even if you are right in your conclusion, the ward population generally was younger and sicker than at other times, that does not appear to account for the increase in mortality in the epidemic period.

A. Yes, within certain limits given the differences between the types of scores that Dr. Rowe did.

Q. Yes.

A. And the different types of scores that Dr. Nadas did, and given that however you



(ANSWERS BY DR. BUEHLER:)

tabulate that study, it, by the very nature of that information that was available only included children who started hospitalization on the cardiac wards. So with those constraints, yes.

Q. Yes, okay. On pages 24 and following you get into discussion of your findings and may I say this that we don't necessarily here focus our attention on individual deaths on a case by case approach. The information with respect to clinical and toxicological data with respect to individual children as you know covers a very wide range qualitatively and quantitatively, information as to the possibility of digoxin involvement in death. But looking at the total picture of the nine months and 36 deaths that you did, do I understand you to be saying in this discussion on page 24 that the cases in which there is any basis for concern that the deaths may not have been natural, fall into a pattern, and that pattern requires an explanation. The pattern consists of a clear association in some of the digoxin involvement and its remarkable clustering of deaths between midnight and 6 a.m. Is it that pattern which in your view as epidemiologists calls for an explanation?



1
2 (ANSWERS BY DR. BUEHLER:)

3 A. Those are two of the salient
4 findings in our investigation.

5 Q. And the explanation to be
6 plausible must take account of those two salient
7 findings, is that fair?

8 A. That is correct.

9 Q. Now, you sought explanations, did
10 you not, and you identified them in the course of
11 the discussion. You considered, did you not, pos-
12 sible changes in patient characteristics, hospital
13 procedures; you considered the possible effects
14 a new crop of residents/interns and fellows in
15 July of the year; and indeed the work-to-rule
16 incident in 1980, you considered that as a pos-
17 sible explanation for these things. You considered
18 the possible effects of the business of the ICU that
19 we discussed yesterday. You considered the possible
20 effect of younger and perhaps sicker ward population
21 in the epidemic period.

22 Am I correct that in your clinical
23 opinion none of those possible explanations stood
24 up to scrutiny in the light of the results of your
25 several studies in the test of the possible explana-
tions and you concluded they did not fit the objective



1
2 (ANSWERS BY DR. BUEHLER:)

3 facts of the pattern that you discerned, is that
4 fair?

5 A. That is fair, but it is extremely
6 important to highlight that our conclusions are
7 formed within the context of what an epidemiology
8 investigation is.

9 Q. I don't take you beyond the scope
10 of what you do as epidemiologists, but am I correct
11 that the possible explanations when canvassed
12 by you and did not satisfactorily explain the pattern
13 which you as epidemiologists had observed.

14 A. That did not seem plausible.

15 Q. At the bottom of page 26 you
16 speak of digoxin involvement. At the bottom, the
17 final paragraph, you address the possible mechanism
18 that you say might have led to the administration
19 of an overdose of digoxin on the cardiology ward
20 patients and you list those possibilities.
21 Contamination of another medication, diluent,
22 IV fluid or infant formula. You conclude,
23 as I understand the report, the final paragraph
24 that once again:

25 "Any explanation must encompass the
following observations: the problem



(ANSWERS BY DR. BUEHLER:)

was limited to the cardiology ward,
(although digoxin is commonly used in
the NICU and ICU as well), the problem
occurred primarily at night and the
problem was associated with a single
nursing team."

Do any of the possible explanations which you have
listed in the early part of that paragraph plausibly
take into account the observation that you say as
an explanation must encompass?

A. No.



1

24jan84 2

C

BMcrc 3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

(ANSWERS BY DR. BUEHLER)

A. No. But again with the same qualifications.

Q. With the same qualifications, of course. On page 27 in the middle you address the question or raise the question that if there were digoxin overdoses they may have been intentional or inadvertent. You do not and you cannot come to any conclusion as to that and certainly I do not ask you to. But again you point out, as I read the report, that for any explanation to be convincing it must explain the observed pattern of the deaths which you had discerned. Do I correctly understand that conclusion?

A. That is correct.

Q. And you properly point out lower down that page that your finding that Nurse Trayner was the only member of the Hospital staff known to be on duty at the time of or within four hours prior to the onset of terminal events in all 28 of the deaths which were considered to have some measure of suspicion, that that does not necessarily mean that she had exclusive access to all of them?

A. That is correct.

Q. And that is a very proper



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

C2

(ANSWERS BY DR. BUEHLER)

observation to make if I may say so. But, fairly, can we say that on the information that was available to you she is the only person known to have had the opportunity for access to all 28?

A. Yes, with the emphasis on the phrase you used, the information...

Q. On the information available to you, that's right.

A. Yes.

Q. We put it slightly differently. Even had you had total and reliable information as to the whereabouts of everybody in the Hospital on all of these occasions, is it fair to conclude that nobody could have had a closer association with the 28 deaths?

A. That is correct.

Q. Okay. And then finally you make recommendations on pages 28 to 29. In the first paragraph under your Recommendations you point out, as we have said this morning, that the epidemic clearly ended in March of 1981. You go on:

"If it is decided, as the evidence suggests, that the increased occurrence of deaths...resulted from



C3 2 (ANSWERS BY DR. BUEHLER)

3 purposeful IV overdoses of digoxin
4 on Wards 4A/B..."

5 And I certainly do not intend to
6 take you beyond the scope of your expertise as
7 epidemiologists but your inclusion of the expression
8 "in your reports" suggests that I am not doing so
9 if I ask you whether it was indeed your view on a
10 consideration of all that you had investigated that
11 the evidence does indeed suggest that the increased
12 mortality rates in the epidemic period resulted from
13 purposeful intravenous overdoses of digoxin on the
14 wards?

15 A. I think our findings lead
16 to that suggestion, but again I would emphasize --

17 Q. It is a suggestion.

18 A. -- that we used the word
19 "suggest".

20 Q. Yes, right. In paragraph 2
21 you point out quite properly again that no hospital
22 is immune from the possibility of intentional harm
23 to patients by hospital employees or others in the
24 hospital. When you came to this assignment in
25 September of 1982 did you at that time consider as
a possibility that the deaths which you were to



C4

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

investigate may have resulted with some greater or lesser degree of someone having done what you call intentional harm to patients at the Hospital? Was that a possibility in your minds back in September of 1982?

A. Yes, that was a possibility.

Q. As physicians, what was your reaction to that possible explanation?

A. That is certainly an explanation that no one would like to face.

Q. Surely.

A. (Dr. Wallace) May I add something?

Q. Yes, of course.

(ANSWERS BY DR. WALLACE)

A. I think it is true to say that all of us who started this investigation had biases because we are physicians and we hoped that we might be able to come to some other conclusion, a nice, simple, easy conclusion.

Q. A non-sinister conclusion?

A. Yes.

A. (Dr. Smith) Yes.

Q. I think it is very forthright of you, Dr. Wallace, to acknowledge that we all come



1 (ANSWERS BY DR. WALLACE)

C5 2 to tasks with biases. Do I take it that your biases
3 led you to be anxious if you could to find an
4 explanation for this increase in mortality that was
5 not sinister?

6 A. Yes, that is true.

7 Q. And I take it that is true of
8 the entire team to the best of your knowledge?

9 A. I will let them speak for
10 themselves.

11 Q. Yes, of course.

12 A. (Dr. Smith) My personal bias
13 was to try and find an explanation which was not
14 sinister and which would not lead in fact to personal
15 association, to try to explain it through some
16 science, medical event perhaps.

17 Q. Do you share that approach to
18 the thing, Dr. Buehler?

19 A. (Dr. Buehler) I think that
20 my goal was to, as best as possible, describe events
21 as accurately as we could.

22 Q. Yes, of course. But acknow-
23 ledging the same wish I take it that you might come
24 to an explanation of those events on the basis of the
25 evidence which was what I call not a sinister one?

26 A. (Dr. Buehler) I think we made



C6

1

2

(ANSWERS BY DR. BUEHLER)

3

every effort that we could given the available data
4 to pursue different hypotheses.

4

5

6

7

8

9

10

Q. Okay. When you come to your
recommendations you suggest that a very hard look be
taken at the drug dispensing and administration
procedures in the Hospital and that of course is a
recommendation that has been made by Mr. Justice
Dubin and his Committee and the Hospital has been
acting on that one.

11

12

13

14

Then you suggested too that the
Hospital, indeed all hospitals be alert to changes
in mortality patterns. I suppose that is a perfectly
sound recommendation; it may be a little difficult
to implement but who knows.

15

16

17

I am grateful to the four of you
for acting as a panel in the way that you did and
those are my questions, Mr. Commissioner.

18

19

THE COMMISSIONER: Thank you, Mr.
Lamek. Mr. Hunt.

20

CROSS-EXAMINATION BY MR. HUNT:

21

22

23

24

25

Q. Yes, Panelists, my name is
Hunt and I represent the Attorney General and the
Coroner's Office at this Inquiry. I would like to
ask you first of all whether you are familiar with



C7

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

the review of your report that was prepared by
Drs. Haynes and Taylor of the Department of Clinical
Epidemiology and Biostatistics at McMaster University,
Faculty of Health Sciences? Have any of you had
an opportunity to look at that review or have all
of you had an opportunity to do so?

A. (Dr. Smith) That review
was given to us on --

THE COMMISSIONER: Yes, Ms. Thomson.

MS. THOMSON: Excuse me, Mr.
Commissioner. As Mr. Hunt indicates the Hospital
did retain Dr. Haynes to prepare this report. We
distributed it amongst counsel last week and Mr.
Lamek delivered it to the authors of CDC. Nonethe-
less, sir, you have been prejudiced against, you do
not have a copy of it to the best of my knowledge.

THE COMMISSINER: No, this is one
time I have not been prejudiced against. I did get
it but it is upstairs though and I was wondering
what I should do about it. But I did receive it.

MS. THOMSON: Well, we are in your
hands, if you would like to enter it as an exhibit.

THE COMMISSIONER: I was sitting
around twiddling my thumbs last week and it worried
Mr. Lamek, so he gave me that to read to keep me out



C8

1

2

of trouble.

3

4

5

MS. THOMSON: Well, we are in your hands. If you would like it entered as an exhibit, sir, we are more than happy to do that at this time.

6

7

THE COMMISSIONER: I take it everybody has a copy of it?

8

9

10

MR. HUNT: Everybody including the press, sir. I heard it discussed on the news last night. So, it would seem only fitting that we be kept abreast of all the evidence the public has.

11

12

13

14

THE COMMISSIONER: All right. Well then, perhaps we can make that an exhibit then and I won't have to send upstairs for my copy. This is called, what, the McMaster Report? It is not officially.

15

16

MR. HUNT: It is actually a review I think, Mr. Commissioner.

17

18

THE COMMISSIONER: It is a review by Dr. Haynes and Dr. Taylor?

19

MS. THOMSON: That is correct.

20

THE COMMISSIONER: Haynes and Taylor Review. What number are we at?

21

22

THE REGISTRAR: 328.

23

--- EXHIBIT NO. 328: Review by Drs. Haynes & Taylor.

24

MR. HUNT: Q. Now, do the panelists

25



ANGUS. STONEHOUSE & CO. LTD.
TORONTO. ONTARIO

Smith, Buehler
Wallace, Kusiak
cr. ex. (Hunt)

422

C9

1

2

have their copies of Exhibit 328 in front of them?

3

We will make one available if you don't.

4

A. (Dr. Buehler) Yes.

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25



EMT/ak

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q. I do not intend to go through Dr. Haynes' and Dr. Taylor's review in great detail with you, but if I could say in summary it would appear on my reading that this review is critical in many respects of the methodology that you used in conducting your studies.

Perhaps I will direct my question to Dr. Buehler and if anybody wishes to add anything they could.

Would that be a fair reading of this review, Dr. Buehler?

(ANSWERS BY DR. BUEHLER)

A. Yes. Let me preface my responses to the questions about the Haynes report with some background on our involvement with that report.

Q. Yes.

A. And when we received it.

Q. Certainly.

A. During the latter part of the summer we received a request to provide information, raw data, to Dr. Haynes for his review. We made every effort to provide him with everything that he felt was necessary.

Those arrangements were made between



1
2 (ANSWERS BY DR. BUEHLER)

3 Dr. Haynes and Dr. Smith. All of that information
4 he needed was here in Toronto; not in Atlanta.

5 We received the report this week;
6 I believe Dr. Smith and Dr. Wallace and Mr. Kusiak
7 received that report on --

8 DR. SMITH: On Thursday.

9 A. (Continued) On Thursday.
10 I received a copy Friday night when I arrived in
11 Toronto to testify at this hearing. We have read
12 Dr. Haynes' report. We have not had time to
adequately scrutinize it.

13 Q. All right. With that
14 qualification then to the position you are in
15 with respect to this report I will proceed with
16 certain questions about it and we can go to the
17 report for anything specific that you would like
to deal with.

18 I take it then that you provided to
19 Dr. Haynes certain raw data that was available here
20 in Toronto; is that correct?

21 A. (Dr. Smith) Yes, that is
22 correct.

23 Q. So the first point I suppose
24 is that this is a review of your report based on
25



D3 1
2 some of the raw data that was available as opposed
3 to a study in itself using the same data that you
4 had?

5 A. (Dr. Smith) Yes, that is
6 correct.

7 Q. All right.

8 Now with respect to the various
9 studies that you did in preparing your report I
10 suggest that this review is in many respects
11 critical of the methodology that you used, and if
12 I could perhaps just to put that in context refer
13 you to pages, the second page and following for the
14 next three or four pages --

15 THE COMMISSIONER: Little 2 or
16 big 2?

17 MR. HUNT: Roman numeral. Second
18 page of the summary.

19 Q. With respect to your study
20 on ward conditions and the features of the
21 cardiology population, it is noted in Dr. Haynes'
22 conclusion that there were many problems with the
23 design, the quality of data and the approach to the
24 analysis which he goes on to describe.

25 A. (Dr. Buehler) Excuse me. I am
not clear where you --



(ANSWERS BY DR. BUEHLER)

Q. The second page, Roman numeral II at the bottom of the summary, and I am looking at the first - well, it is your third study under the heading Ward Conditions, Features of Cardiology Population, right at the bottom of that page.

A. Yes. Thank you.

Q. Now I am not going to stop and ask you questions on each of these areas until we sort of define them to begin with.

Over on page III, your study on ward population, severity of the illness and the prognosis, under conclusions Dr. Haynes has indicated that the basic design of the study in his view was weak; in the study on comparison of epidemic period deaths and deaths in other periods he felt that it was based on data of uncertain reliability.

With respect to your study on possible digoxin related morbid events he felt that there was scanty detail of the execution of the study which affected its use.

On death roommate study he outlines several problems which he described as methodologic problems. I am over on page Roman numeral IV.

And finally - or, sorry, association



(ANSWERS BY DR. BUEHLER)

of death with Hospital personnel, he outlines a number of problems that he finds in your approach to the staffing schedules that were examined, and he outlines a number of criticisms with respect to the study on mortality for July to October of 1982.

Now I do not intend to deal with each area where Dr. Haynes has outlined in this report criticisms of a methodology of your approach, and Mr. Scott who represents the Hospital will be here tomorrow. I am sure he is going to deal with those aspects of this.

But what I would like to deal with are some of the conclusions that Dr. Haynes comes to with respect to certain of the conclusions that you have come to in your own report, and the first I suppose beginning at page II, that is Roman numeral II again, that he found the crude mortality rates reported in your Study II that showed a substantial increase in the rate of deaths during the nine-month period of July 1980 to March 1981 in comparison with the surrounding periods of time was a real increase and a large increase.

Secondly on page IV about the third paragraph he found that the deaths during July 1980



1
2 (ANSWERS BY DR. BUEHLER)

3 to March 1981 were clustered among younger babies
4 during the hours of midnight to 6:00 a.m. on Ward
5 4A, and particularly among babies in the infant room
6 who had intravenous lines.

7 And thirdly, a point that my friend
8 Mr. Lamek just made with respect to Nurse Trayner,
9 notwithstanding his comments concerning the data
10 that you examined having to do with Hospital
11 personnel, that it is not possible on the data
12 available that any person other than Nurse Trayner
13 could have been more strongly associated with the
14 Category A and Category B deaths inasmuch as she was
associated with all of them.

15 Now if I can just summarize those
16 findings as Dr. Haynes does at the bottom of page V.
17 He says that:

18 "Despite the difficulties with many
19 of the studies described in the
20 report -- "

21 that is in your report --

22 "we feel that several findings are
23 both valid and helpful in documenting
24 and understanding the increased
25 cardiology ward mortality during the



(ANSWERS BY DR. BUEHLER)

"July 1980 to March 1981 period.

Furthermore, although each of the individual studies can be criticized from the prospect of epidemiologic methodology, taken together they provide convincing evidence that there was indeed a substantial increase in cardiology ward mortality that can best be explained by untoward events in the infant room of Ward 4A most strongly associated with the working schedule of one particular individual during the July 1980 to March 1981 period."

Now would you agree with me that a fair reading of this review comes to the conclusion that while Dr. Haynes has a number of criticisms about the methodology that you used in conducting your study at the end of the day he finds that your most important and perhaps basic conclusions are indeed valid and helpful in documenting and understanding the increased cardiology ward mortality?

A. Yes.

A. (Dr. Smith) Yes.



(ANSWERS BY DR. BUEHLER)

Q. All right. Now in examining this, and when we put aside the methodology and the criticisms involved there, there is indeed in this review support for the findings that you have come to yourselves?

A. Yes.

A. (Dr. Smith) Yes.

Q. I just wanted to take you to page 21 of that report if I might, and this deals with Dr. Haynes' comments on your study of the association of death with Hospital personnel, and on page 21 Dr. Haynes provides us with some information on epidemiology and statistics in the third full paragraph on that page.

Now if I can just read it so that we all have the correct paragraph:

"In epidemiologic terms, the association of one factor and another (in this case one nurse's working schedule and the deaths on her ward) does not establish causation. (That is that the nurse was responsible for the deaths.) However, statistically significant association is a necessary



(ANSWERS BY DR. BUEHLER)

"pre-condition for establishing causation. (That is it is a necessary but not sufficient condition.)

In general in epidemiologic studies an association indicated by a relative risk of 2 would be regarded as weak; a relative risk of 5 would be moderately strong; while a relative risk of 10 or more (such as exists between cigarette smoking and lung cancer) would be regarded as very strong."

Now just stopping there could I ask you, whoever feels most appropriate to answer this, whether you agree with that statement?

A. I think Mr. Kusiak would be --

A. (Mr. Kusiak) I think that is commonly accepted in epidemiologic literature.

Q. All right. And carrying on then:

"Thus the relative risk of 33.3 for the working hours of Nurse 401 with all deaths during the July 1980 to March 1981 period is extremely strong."



1
2 Would you agree with that statement?

3 (ANSWERS BY MR. KUSIAK)

4 A. Yes.

5 Q. All right.

6 "In the context of the rest of the
7 studies described in the report, the
8 association of the deaths with Nurse
9 401 is much stronger than the associa-
10 tion of the deaths with any of the
11 many other factors considered."

12 Would you agree with that statement?

13 A. Yes, I would agree with that
14 statement.

15 Q. All right.

16 A. It is clear that this is the
17 strongest association.

18 Q. All right. And just curiously
19 I take it that the comment about cigarette smoking
20 and lung cancer - is there some information and
21 evidence available that suggests that the relation-
22 ship between cigarette smoking and lung cancer does
23 produce a relative risk of 10?

24 A. Yes, Dr. Doll, Sir Richard
25 Doll in England has studied the mortality pattern
among physicians since 1950, and established that



1
2 (ANSWERS BY MR. KUSIAK)

3 smoking a pack of cigarettes a day produces a
4 relative increase in risk as compared to non-smokers
5 of I believe somewhere between 16 and 30.

6 Q. So it is based in part I take
7 it on that type of a statistical finding of a
8 relative risk of 10 between smoking and lung cancer
9 that we have the information that is passed on to
10 all of us about that risk and certain actions the
government takes with respect to lung cancer.

11 Would that be fair?

12 A. It is that, together with the
13 observation that the more one smokes the greater
14 the relative risk of lung cancer.

15 Q. You indicated, Dr. Buehler,
16 yesterday that before you commenced your investigation
17 and your studies that you did have certain discussions
18 with both the police and with Dr. Tepperman of the
19 coroner's office. I think you outlined generally
those discussions.

20 Were you influenced in terms of the
21 approach that you took or the end result that you
22 expected or began to think about as a result of your
23 discussions with either the police or the coroner's
24 office before you started this?
25



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

A. There is something in the
question I would like to draw your attention to.

Q. Sure.

A. You said and the result that
we expected.

We didn't conduct our study with an
expected end result. With that caveat, no,
Dr. Tepperman's comments did not influence the
design of our study.



1

24jan84 2

E

DMrc

3

(ANSWERS BY DR. BUEHLER)

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q. I was referring to both the police and Dr. Tepperman. I take it your answer is that you are saying you are not influenced in terms of direction you took by anything said to you by the police or the Coroners?

A. The police had told us only their impressions of the nurse data that they had examined, but our decision to undertake that study ourselves, or a similar study, was not influenced by their information.

Q. And you indicated yesterday that you thought it was Dr. Tepperman I suppose as opposed to the police, or anyone else, who had some very definite, I think the words used were "definite theories" with respect to what went on on Wards 4A and 4B during that period of time?

A. That question dealt with interviews we had during the first few days we were there. Dr. Tepperman was one of those individuals and he was quite outspoken. We met with the police sometime after that.

Q. Is it fair to say Dr. Tepperman's views that he expressed to you at that time were to the effect that in his opinion



E2

1

2

(ANSWERS BY DR. BUEHLER)

3

someone was deliberately killing babies during this
period of time on Wards 4A and 4B?

4

5

A. Yes, that was his opinion.

6

7

8

9

Q. And that was something I
suppose you took into account but certainly it did
not dictate how you proceeded in the studies that
you undertook after that point in time?

10

11

12

A. No. Dr. Tepperman, the
interview we had with Dr. Tepperman was part of
several interviews to try and familiarize ourselves
with issues of what we were dealing with.

13

14

15

16

17

18

Q. And of course by that point
in time his Honour Judge Vanek who presided at the
preliminary hearing had also come to certain con-
clusions with respect to four of the children that
died within this period of time. Were you made
aware of his conclusions when you became involved
in August and September of 1982?

19

A. Yes.

20

21

Q. I take it his conclusions
had no more influence on you than did anything said
to you by the police or the Coroners?

22

23

24

25

A. That is correct. As a
general matter we attempted to start from scratch in



E3

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

terms of the information we collected in the
design of our study.

MR. HUNT: Thank you. Those are
all the questions I have.

THE COMMISSIONER: Thank you. Mr.
Ortved.

MR. ORTVED: Thank you, Mr.
Commissioner.

CROSS-EXAMINATION BY MR. ORTVED:

Q. You will have to forgive me
because I don't pretend for a moment to have the
expertise and statistics that the Commissioner
demonstrated yesterday and that causes problems when
I try and interpret portions of your report.

Firstly, as I understand it, the
evidence is that although the report speaks to the
population of infants admitted during the epidemic
period as being younger and sicker than in the non-
epidemic period, I take it that the present position
is that perhaps that is not the case; is that so?

A. Before I answer you, would
you please excuse my lack of familiarity with the
proceedings, everyone has been here for months on
end but I am new, and I didn't catch your introduction.



E4

1

2

(ANSWERS BY DR. BUEHLER)

3

THE COMMISSIONER: Mr. Ortved acts

4

for several of the doctors --

5

MR. ORTVED: I am a friend.

6

THE COMMISSIONER: -- several of

7

the doctors on the cardiology wards of The Hospital
for Sick Children.

8

DR. BUEHLER: Thank you.

9

MR. ORTVED: Q. My name is Ortved

10

and I act for a number of doctors at The Sick

11

Children's Hospital, including the clinicians.

12

A. Thank you.

13

Q. But you are not unclear of

14

the fact that I don't follow statistics.

15

A. You have made that point.

16

Q. Am I correct in terms of

17

my question to you that really the difference in terms
of the severity of illness and the age at time of

18

admission is not as set out in the report?

19

A. That is correct. It appears

20

that we made an error in tabulating that part of the
study. As I mentioned yesterday we were not

21

informed of that error in time to adequately review

22

our basic data ourselves.

23

Q. So just so that I am clear on

24

25



E5

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

this, in terms of being younger, in fact there was no statistical significance although there may be some variation, is that correct?

A. According to Dr. Haynes' report, right.

Q. And in terms of the less favourable disease severity ratings the difference is very slight?

A. Again according to Dr. Haynes' report.

Q. Which you don't dispute I take it?

A. Let me say we do not dispute that we made an error in calculation. However we have not had time to adequately try and figure out exactly what the proper tabulation should be.

Q. Thank you. But then again, just so that I am clear on this, we are speaking in terms of the entire population of the cardiology wards during the epidemic period as opposed to the population of those who died, correct?

A. That is correct. We are addressing the population of children who began hospitalization on a cardiology ward, a sample of



E6

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

those children.

Q. If I can then for the purpose of my next few questions deal with that population of infants who died. In fact would I be correct in suggesting to you that those children were younger than the deaths of those that occurred in the non-epidemic period?

A. That is correct, they had a younger median age.

Q. In fact it was a very significant difference, was it not?

A. The way we presented that particular finding we did not attach a probability statement to that finding.

Q. My reference to that finding on the part of your team was that the median age of death for epidemic deaths was 43 days, whereas the median age of non-epidemic deaths was 942 days, is that correct?

A. Excuse me, you are reading from page 15?

Q. Unfortunately I don't have my reference.

A. (Dr. Wallace) The second



E7

1

2

(ANSWERS BY DR. BUEHLER)

3

paragraph on page 15.

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A. What we said was that the median age at death was 1,969 days for the 11 pre-epidemic deaths; 42.56 for the 36 epidemic deaths; and 107 days for the non-post-epidemic deaths.

Q. Now have you in the course of your efforts combined the pre and post-epidemic deaths to arrive at a median age?

A. Let me ask you, are you referring to the draft manuscript that we submitted to the Hospital?

Q. Yes.

A. I believe, although I don't recall that in the draft manuscript we described mean as opposed to median age. As that manuscript was a draft I don't care to vouch for the accuracy of everything that is in there, that was clearly a draft.

THE COMMISSIONER: Did we hear about this draft before?

MR. ORTVED: Well, the draft we have heard about -- we have heard about it in the context of my representations to you I would say in about



E8

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

July of 1983 as to why we were not getting a copy of the Atlanta Report when we appeared to be the only ones who were not receiving information about it and I gave a copy at that time to Mr. Lamek.

MR. LAMEK: You may remember, Mr. Commissioner, at that time Mr. Ortved became aware that a draft was being prepared for publication indeed as Dr. Buehler has said was sent to the Hospital as a matter of courtesy and for comment as to accuracy et cetera. That was the time when the issue was ablazing as to when and under what circumstances the Atlanta Report would be released. A copy of that was provided to me and I was able to assure you, and I think at the hearing at the time and it should be in the transcript, that there was indeed such a draft but it made no reference to those matters which were causing you concern about the timing of the release.

THE COMMISSIONER: I thought that that was something to do with Dr. Buehler's addresses to --

MR. LAMEK: No this is a rather different thing, it didn't come anywhere near being introduced as an exhibit that would not have been



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

E9

(ANSWERS BY DR. BUEHLER)

appropriate, but I did assure you that its contents did not involve the matters that were concerning you at the time.

THE COMMISSIONER: I wonder if I could ask Dr. Buehler, you prepared a draft at one point for some purpose, was this a draft of your report, or was it, was that it?

DR. BUEHLER: That is correct. We prepared a draft manuscript with the intent that at some stage clearly after this had been settled that we would submit it for publication in a scientific journal.

THE COMMISSIONER: That is what it is, but this is not a draft of the report?

DR. BUEHLER: No.

THE COMMISSIONER: It is a draft after the report has been -- I remember that, I remember that, and that is what you are talking about.

MR. ORTVED: That is right.

THE COMMISSIONER: I thought this was a draft of some sort that was sent ahead of time to the Hospital.

MR. ORTVED: No.

THE COMMISSIONER: It would have been



E10

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

rather devastating information, but that didn't happen, and I have read that.

MR. ORTVED: Yes.

THE COMMISSIONER: I received that at some point and it gave away no detailed secrets at all.

DR. BUEHLER: We avoided any reference on the associations between Hospital personnel and death.

THE COMMISSIONER: Yes, all right.

MR. ORTVED: Q. The only point of my referring to that is that in the statistics there appear to my uneducated perspective to be presented in a little more helpful language than your conclusion at page 15. Because what you did in the draft was collect the pre and post-epidemic period deaths and calculate the median age and it is something that was not done in your report, that is all it is, right?

A. There were a number of parts of the draft where we collected information in the report in the interest of brevity.

Q. Right.

A. I believe in the way we did



E11

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

that we collapsed the data in the way that we could calculate tests for significance, but again in terms of our testimony here I would prefer to deal with the data as it is presented in the report. I can assure you that it is the same data but that draft manuscript is clearly identified as a draft, and as such I would not care to vouch for the accuracy of it.

Q. The actual number of days are not important to me, Dr. Buehler. But I take it you will confirm for me whether we are using the figures contained in the draft, or the figures contained in your report at page 15, that in fact the babies who died on the wards in the epidemic period were statistically, and in fact very much younger than the babies who you examined and died in the non-epidemic period, correct?

A. The mean age was considerably younger and the median age, whichever indicator you choose, they were both considerably younger.

Q. And in terms of another figure which you may or may not want to confirm, taken from your draft, but I don't think there is any contest about this, 33 or 92 per cent of the



E12

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

epidemic deaths were less than one year of age;
whereas only 10 or 50 per cent of the non-epidemic
deaths were less than one year of age. It is just
another way of expressing the same conclusion,
namely that the children who died on the cardiac
wards in the epidemic period were a very young
group, correct?

A. That is correct, although
again I am not going to vouch for the exact numbers
in the draft.

Q. Then another item to which
you made reference in your testimony was the
disease severity rating, and you have told us that
this was not statistically significant for the
group admitted to the cardiology wards in the
epidemic period.



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

But again in terms of the actual group who died, again, I put it to you, based on the figures that are in your report and which you can support, they were a very severely diseased group, correct?

(ANSWERS BY DR. BUEHLER:)

A. Let us refer to the table for just a moment.

Q. I'm going to refer you to more than one, which one are you going to refer to?

A. I am going to refer to table 7.

Q. Right. This is the Prognoses?

A. Status on admission.

Q. Right.

A. As judged by Dr. Nadas' clinical assessment or impression, 9 of the 36 epidemic deaths or 25% were in critical condition; again as judged by Dr. Nadas. 9 of 36, 25%.

Q. And the prognoses on admission, according to Dr. Nadas was poor in respect of 18 of 36, correct?

A. That is correct.

Q. In terms of intermediate, would that be equivalent to Dr. Nadas' term guarded?

A. Yes, that is correct.



(ANSWERS BY DR. BUEHLER:)

Q. So, if we take the total of your intermediate plus your poor prognoses, we have a total of 91.7% of the infants at the time of admission having either a guarded or poor prognosis, correct?

A. That is correct.

Q. Then also in terms of severity, we have your statistics regarding indwelling IV lines. Do you recall those? I suppose firstly we should start off with the question, is it a reasonable conclusion that in order to have an indwelling IV it is likely that a patient is likely in the severe condition?

A. That may or may not be correct. I think I would defer that question to one of the other panelists.

A. (DR. SMITH) That may or may not be correct, that the presence of an IV necessarily means that the patient is in severe condition.

Q. Well, let's just assume for the moment that it may be something that you might want to bear in mind considering the condition and let's look to see what proportion of the children who died had indwelling intravenous. Can you point me to that



(ANSWERS BY DR. BUEHLER:)

figure, please?

A. That is on page 15 of the text at the bottom of the page, 31 of 36, 86.1% epidemic-period deaths versus 9 of 20 45% non-epidemic deaths had an IV line at the reference time.

Q. All right. Then another factor which I would ask you to look to, although I concede it may not be indicative in and of itself is the whole issue of nursing attention and as to whether or not the infants who died as compared with their roommates required more or less nursing attention. Can you point me to that figure?

A. You are now referring to a different study. That is on page 19, "Nursing Time Required."

"As predicted from the nursing-time scores, dying patients required more nursing care than their surviving roommates."

That is based on those children who died during the epidemic period for whom we could identify roommates and for whom we could identify that information.

Q. All right.

A. Of the 94 survivors 61 or 64.9%



(ANSWERS BY DR. BUEHLER:)

required less nursing time than their dying room-mates; 14, 14.9% required an equal amount of time; 7, 7.4% required more nursing time and 12, which would be the remaining percent, and for 12 data were not available.

Q. Right. And then the last item I have asked you to consider.

THE COMMISSIONER: Can I just interrupt for a moment. I take it when you say dying patients, I take it you mean patients who died.

DR. BUEHLER: That is correct.

THE COMMISSIONER: Not patients who were in a dying state.

DR. BUEHLER: We looked at the children who were in the room at the time that the child who died suffered terminal deterioration. So, in a sense, that child had suffered the event that led to death.

THE COMMISSIONER: Yes, but are you including the terminal events as part of the nursing care because the others required greater nursing care at that time?

DR. BUEHLER: No.

THE COMMISSIONER: You are taking what



1
2 (ANSWERS BY DR. BUEHLER:)

3 they required before the terminal events and those
4 who died required more. Is that right?

5 DR. SMITH: Yes. I would like to add
6 that this particular score was the closest score to
7 the reference time. So, that would have been the
8 score given to these children on the preceding night,
9 which would have been the closest score, just before
midnight.

10 MR. ORTVED: Q. Right.

11 A. (DR. SMITH) So, it would have
12 been the score within 24 hours.

13 Q. I understand. Then, lastly,
14 Dr. Buehler and the rest of the team, I would ask
15 you to consider the results of Dr. deSa's study
16 concerning the pathology reports in those cases in
17 which autopsies had taken place and the results
18 were that he felt that he had anatomic defects or
19 there were anatomical defects present to explain
20 virtually all of the deaths for which there were
autopsies, correct?

21 (ANSWERS BY DR. BUEHLER:)

22 A. That is correct.

23 Q. And I am suggesting to you that
24 based on those items of evidence, it would appear clear
25



(ANSWERS BY DR. BUEHLER:)

that the infants who died had very severe heart disease, no question of that, but also severe by comparison with the other patients on the ward. Do you agree?

A. I would agree with the first part of your statement but not necessarily with the second.

Q. All right. That depends on --

A. Excuse me, will you please rephrase your question again?

Q. All right. I am suggesting to you that there is no question from all of those items of evidence that the patients who died in the epidemic period had very severe heart disease, correct?

A. We stated that in our conclusions, yes.

Q. And I am suggesting to you that by comparison with the other patients on the ward it would appear reasonable to assume that they may have been the more severely ill patients on the ward.

A. By comparison not to other patients on the ward but by comparison to other children who were in the same room at the time they suffered terminal deterioration.

Q. All right.



(ANSWERS BY DR. BUEHLER:)

A. That is an important distinction.

Q. All right. So certainly then in the room which you are aware which was reserved for the younger children, correct, these would appear to be the sicker of the young children in that infant room, correct?

A. My understanding is that the rooms immediately adjacent to the nursing station were for younger children who required the greatest nursing supervision.

Q. And that is the room we are speaking of, that is one of the rooms we are speaking of here?

A. One of the rooms.

Q. All right. So, I am asking you to conclude that it would appear that we have here a group of these sicker babies in the infant room, correct, one of the infant rooms.

A. If we can use the NARvel score as an indicator of severity.

Q. Bearing in mind that qualification. Right?

A. Yes.



(ANSWERS BY DR. BUEHLER:)

Q. And I suppose it depends, you are telling me it depends on other evidence as to whether we can assume the patients consigned to the infant room are perhaps the category of most severely ill patients on the ward, right?

A. My understanding in terms of background information we were provided is that the patients in the two rooms flanking the nursing stations were amongst the youngest patients and among those who required the greatest care.

Q. Thank you. The third point I want to make is, no question about this, we have obviously a situation of deaths occurring predominantly at night, correct?

A. That's one of the factors that distinguishes deaths during this nine month period.

Q. Right. So, to the extent that physicians have taken the position that they perceived a problem having to do with increased mortality, experience amongst infants, severely ill, during the night, all of those factors are borne out by your team's investigations, correct?

A. (DR. SMITH) Would you please repeat that one at a time, the factors?



1

2

(ANSWERS BY DR. SMITH:)

3

Q. Yes.

4

A. So that we can have a chance
to refer to each of them.

5

6

Q. So, to the extent that physicians
have indicated they were aware of a problem of
increased mortality, that's borne out by your study?

7

8

A. Yes.

9

10

Q. To the extent that they were
aware of a problem of increased mortality occurring
at night, that is borne out by your evidence?

11

12

A. That is correct.

13

14

(ANSWERS BY DR. WALLACE:)

15

A. Could I add. We are not aware
of the physicians that you are referring to.

16

Q. No.

17

A. If they were indeed aware of this
fact, I cannot answer that.

18

19

Q. No, I understand that. I am
just suggesting to you that we have had that
evidence and I am asking you as to whether or not
these factors are borne out by your investigations.
So, we have increased mortality, occurring at night,
amongst young infants, that is borne out by your

20

21

22

23

24

25



Smith, Buehler,
Wallace, Kusiak
cr. ex. (Ortved)

(ANSWERS BY DR. WALLACE:)

investigation?

A. Yes.

Q. Correct?

A. Yes.

Q. And lastly among very sick young infants, that would appear to be borne out by your investigation, correct?

(ANSWERS BY DR. BUEHLER:)

A. Yes, as indicated by Dr. deSa's study which reveals that the pathology findings showed they had major forms of heart disease and as suggested by this study using the NARvel scores.

Q. Correct. In addition, it is clear from your report, and I refer specifically to page 7, that the intensive care unit would clearly appear to have been well utilized throughout the epidemic period.

A. Yes.

Q. And you go on and in the course of your evidence in chief were anxious to point out that this was not a problem, to the extent there was a problem, it was confined to the epidemic period.

A. That is correct. As we stated, during 42 of the preceding 52 months approximately 80%,



11 1
2 (ANSWERS BY DR. BUEHLER:)

3 that occupancy rate had been exceeded as well.

4 Q. Right.

5 A. But it was certainly more common
6 during that nine month period.

7 Q. And I take it that what we have
8 evidence here for is the fact that space in the ICU
9 was a continuing problem and particularly a problem
10 during the epidemic period.

11 A. As we have stated, yes.

12 Q. And in fact, I don't have the
13 reference, but I seem to recall somewhere in the
14 report there is mention made of the fact that
15 at Dr. Nadas' hospital the ICU facilities were some-
16 thing in the neighborhood of four-fold that of the
17 Hospital for Sick Children, am I correct in that?

18 (ANSWERS BY DR. SMITH:)

19 A. We were told by Dr. Nadas that
20 their total number of beds is half as many and that
21 their ICU beds are twice as many. So, that would
22 account for a four-fold difference, yes.
23
24
25



1

24jan84 2
G
EMTrc 3

(ANSWERS BY DR. BUEHLER)

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q. I see. What you went on again to make clear is that you really can't translate directly from pressure on the ICU to decisions as to whether to transfer or not, but that you I take it are prepared to acknowledge today that it may have a bearing as to who goes to the ICU and when?

A. We can't speak to the particular policies of the ICU.

We did discuss with Dr. Barker in general what his policies were, and in our background information we provide information on what our understanding of the transfer process was. And it is clear from our findings there was more pressure on the ICU that did lead to some concern on our part that the possibility of a change in the nature of the patient population - in other words the more severely ill population might account for the increase in mortality. That is a consideration that we had.

Q. And do I understand that in the course of your investigations and your familiarizing yourselves with the lie of the land at The Hospital for Sick Children you were advised



G2 2 (ANSWERS BY DR. BUEHLER)

3 of the proposal concerning an intermediate ICU?

4 A. Yes.

5 Q. Part of the rationale for
6 that being to combat the problems of facility for
7 young children, severely ill, not able to be
8 admitted to the Intensive Care Unit and would pro-
9 vide for increased coverage particularly at night?

10 A. That is testimony given by
11 the others that have preceded us, but I think you
12 are taking us a little bit beyond what we can say
13 from our report.

14 Q. Okay. Well, I am not talking
15 about your report so much as the investigations
16 that you undertook in relation to the background
17 for your report. You certainly knew of the proposal
18 for an intermediate ICU, did you not?

19 A. Yes, that is correct.

20 Q. Did you go into the rationale
21 behind that proposal?

22 A. Our understanding of the
23 rationale for that was that there was a need for
24 a higher level of care on the cardiology ward.

25 Q. All right.

26 A. (Dr. Wallace) Could I add
27 one thing? In reviewing these patient charts there



G3

1

2

(ANSWERS BY DR. BUEHLER)

3

was no record by any physician that he had deemed
the condition of any child such that it should be
transferred to the ICU but no beds were available
to do this.

6

Q. All right. Thank you.

7

8

We have heard a great deal of
testimony here concerning the issues of whether
deaths in cardiac patients are expected or un-
expected and as to whether they are consistent or
inconsistent with digoxin intoxication.

10

11

12

All I ask you to do is refer to
your page 40, please, of your report.

13

14

A. (Dr. Smith) At page 4?

15

Q. Page 40.

16

17

A. (Dr. Wallace) The report on
this page is numbered 31.

18

19

A. The original draft is only
numbered up through the --

20

21

22

Q. Anyway I am looking at my
number 40 and it is Table No. 7, the second page.
The first table there deals with the timing of
death and these aggregate the scores of the
consultant cardiologists. Correct?

23

24

A. That is right.

25

26



G4

1

2

(ANSWERS BY DR. BUEHLER)

3

4

5

Q. There is reference to death
being unexpected in a large proportion, fully
69.5% of epidemic deaths; correct?

6

A. You are add...

7

Q. I am adding --

8

9

A. ...the unexpected and
consistent category with the unexpected and in-
consistent category?

10

Q. Exactly.

11

12

13

A. So we have 25 plus 7 or
44.6 plus 12.5. I'm sorry; you are adding 19 and 6
or 25 of 36; is that correct?

14

15

Q. Right. But the other, the
figure to which I wish to draw your attention is
the fact that in the non-epidemic period --

16

A. Correct.

17

18

19

20

Q. -- if you add up the pre
and post-epidemic periods it would appear that
according to Dr. Nadas' analysis of those deaths
you would have fully 35% of those deaths which are
unexpected.

21

A. Yes. That is quite correct.

22

23

24

25

Q. And do you feel competent
as a pediatrician to comment on that in terms of



G5

1

2

(ANSWERS BY DR. BUEHLER)

3

cardiac patients and cardiac deaths?

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A. Let me advise you that I am not here to testify as a pediatrician. I am here to testify on the content of our report, and I am certainly not qualified to comment on how well Dr. Nadas performed his task.

Q. Well, I can leave it there because I want to then take you to the next table, Mode of Death, and whether it is consistent with or inconsistent with digoxin intoxication.

Again we have a total of 80.8% - 82.8% in relation to epidemic deaths. Is that correct? Adding the 52.8 and 30.6 figures.

A. 19 plus 11, 20 -- or, rather, 30 of 36.

Q. Right.

A. Approximately that.

Q. Again the figure to which I wish to draw your attention is the figure above that; namely, for the non-epidemic period according to Dr. Nadas' view fully 55% of deaths would be termed consistent with digoxin intoxication; is that correct?

A. That is quite correct.



G6

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

MR. ORTVED: Thank you. Those are my questions, Mr. Commissioner.

THE COMMISSIONER: All right. Thank you.

Ms. Symes, would you like to start after the break or would you like to --

MS. SYMES: Yes, Mr. Commissioner, I would like two minutes. Thank you.

THE COMMISSIONER: All right. We will take 22 minutes then.

--- recess.

--- on resuming.

THE COMMISSIONER: On the question of timing it is obviously in the interests of the witnesses as well as the Commission if we can complete the examination of the Atlanta party by this week. There is a remote possibility we might be able to do it by Thursday but if we don't I would like to sit on Friday, provided, of course, there is a reasonable opportunity of completing it by then.

Now bearing that in mind I think counsel had better try to sort out the times that they will appear.

MR. TOBIAS: Mr. Commissioner, where does that leave us in the event that Mr. Percival is



G7

1

2

not available until Monday as opposed to Thursday?

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

THE COMMISSIONER: Well, I thought he was going to be available Thursday. If he is not available Thursday, surely he is available Friday.

MR. TOBIAS: Well, I was under the impression it was Thursday and/or Monday, but I will check that point.

THE COMMISSIONER: Well, that is awkward, but when we have a witness coming from out of the country I sometimes --

MR. TOBIAS: Accommodation.

THE COMMISSIONER: He may have to -- he may just have to do it sometime.

MR. SHINEHOFT: Well, Mr. Commissioner, I thought there was another member of the team that was going to be coming on Monday.

THE COMMISSIONER: Oh, I don't know whether that is going to be so or not now in light of this, but in any event what has that got to do with this problem?

MR. SHINEHOFT: Well, I don't know. If this person is still going to come and give evidence might not that --

THE COMMISSIONER: Well, we are not



G8

1

2

going to delay cross-examination of this team until
someone else comes in.

3

4

MR. SHINEHOFT: I see.

5

6

THE COMMISSIONER: That won't have
anything to do with it. But I am not at all sure
now that someone else will be coming in.

7

8

MR. HUNT: Mr. Commissioner, there
is some talk of sitting on Friday.

9

10

11

THE COMMISSIONER: Yes.

MR. HUNT: I suspect that Mr.
Percival could be here Thursday or Friday.

12

13

14

I should tell you that initially we
thought, and in fact Mr. Lamek had informed us,
that this panel was going to likely be with us for
two weeks.

15

16

17

18

THE COMMISSIONER: Yes.

MR. HUNT: Mr. Percival has all of
next week available, and that is when we thought we
would be called upon to cross-examine.

19

20

21

THE COMMISSIONER: Yes. I think what
is happening is we are getting a little smarter and
we are doing things a good deal faster than we were
before, and that delights me no end.

22

23

24

25

MR. HUNT: It is quite a surprise to
us as well.



G9

1

2

THE COMMISSIONER: That is what is

3

happening.

4

You were going to say something,

5

Mr. Lamek?

6

MR. LAMEK: Only this, Mr.

7

Commissioner: It was contemplated that the evidence

8

about the Atlanta Report might occupy as much as

9

two weeks and therefore I slotted aside that amount

10

of time. And it was understood that Dr. Buehler

11

could be here this week. He can't be here next,

12

but Dr. Heath, if we went into the second week, would

be here the beginning of next week.

13

I would not propose to have Dr.

14

Heath come up here if in fact we can finish with

15

these witnesses on the subject of the Atlanta Report

by Friday.

16

Dr. Heath is even out of the United

17

States this week and does not return until Saturday

18

as I understand it.

19

THE COMMISSIONER: Yes. Well, I

20

would think --

21

MR. LAMEK: And if there is a chance

22

of finishing by Friday with the entire topic of the

Atlanta Report I would suggest we do it.

23

MR. YOUNG: With that in mind I will

24

25



1
G10 2 contact Mr. Percival today and try to get some
3 assurance that he will be here Thursday or Friday.

4 THE COMMISSIONER: Well, I would
5 like counsel to sort of sort themselves out and
6 if we can complete the cross-examination by Thursday
7 or Friday, if necessary that we sit Friday, but
8 those who are not available Friday can always manage
9 to get in their cross-examination before that.

10 All right now, Ms. Symes, if you
11 take us until Friday noon all those plans are going
12 to fall by the wayside.

13 MS. SYMES: I would probably do so
14 on penalty of death.

15 You see, if you thought you were
16 going to go after all the principal players in this
17 you didn't think that you were going to have to ask
18 the questions for the first time.

19 CROSS-EXAMINATION BY MS. SYMES:

20 Q. My name is Beth Symes and I
21 represent the Registered Nurses' Association of
22 Ontario and 39 of the individual nurses, some of
23 whom are listed in your report.

24 First of all, could you tell me
25 who did the statistical design for the study? Which
of you?



G11

1

2

(ANSWERS BY DR. BUEHLER)

3

4

A. We worked on it together
as a group and Dr. Heath.

5

6

Q. Was it a committee decision
as to the design?

7

8

A. It was a consensus decision,
yes. It was a group decision.

10

11

12

13

14

Q. I gather then that you were
in Toronto working on the field part of your study
for about two months; is that right?

15

16

17

18

19

20

A. I was in Toronto myself on
and off between the early and mid-September into
I believe December of 1982, and the other members
of the team were working on the problem throughout
that period.

21

22

23

24

25

In addition I was in Toronto in
January preparing the final version of the report.

Q. And I gather when you first
came to The Hospital for Sick Children in September
that you had certain advance knowledge before you
started on Day One about the subject?

A. I had very little advance
knowledge. I had a general sense of what the problem
was.

Q. Were you aware, for example,



G12

1

2

(ANSWERS BY DR. BUEHLER)

3

that Nurse 402 had been charged with the murder of
four of the children?

4

5

A. Yes.

6

Q. Were you aware that she was
discharged at the preliminary?

7

A. Yes.

8

9

Q. Were you aware that the
Metropolitan Police were conducting an ongoing
investigation of homicide?

10

11

A. We were not clear as to what
other investigations were going on. We learned that
very soon after we began.

12

13

14

Q. I gather within the first
couple of days of your being on site in Toronto
you knew there was an ongoing homicide investigation?

15

16

A. That is correct.

17

18

Q. Were you also aware that the
Police Department had widened the number of babies
that were under suspicion?

19

20

A. We were informed of that
within the first few days of our arrival.

21

22

Q. By the Police?

23

A. By the Hospital.

24

25

Q. By the Hospital? Were you



1
G13 2 (ANSWERS BY DR. BUEHLER)

3 aware before you began the actual statistical work
4 which of the babies were under suspicion by the
5 Police?

6 A. Yes.

7 Q. Now, in --

8 A. May I qualify that, please?

9 We certainly knew which names had
10 been in the headlines. We certainly knew --

11 Q. Names of babies?

12 A. Names of babies, and we
13 certainly had been given a list by the Hospital that
14 they had prepared in advance of us coming up, and
15 also we were aware of the report that Dr. Bain had
16 prepared. That was given to us by the Hospital,
17 so we had a sense of which children were under
18 concern or question, yes.

19 Q. Of the 36 deaths during the
20 epidemic period how many did you understand were
21 under suspicion or concern in September of 1982?

22 A. One of the problems that we
23 faced on first arriving was that everybody had a
24 somewhat different number, and therefore it is
25 impossible to answer that question. We defined our
period of study and there were 36 that fell within



G14

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

our defined epidemic period.

Q. There were 36 deaths, and
my question to you is how many of those were
suspicious?

—



1 (ANSWERS BY DR. BUEHLER:)

2 A. We had heard about the four
3 that -- that were involved in the charges against
4 the original nurse who was arrested.

5 Q. That was 4?

6 A. That is correct, and then
7 we had heard about this business of the copycat
8 cases, etc., and we had some of the lists that
9 the hospital had prepared where they classified
10 deaths into expected and unexpected prior to our
11 arrival, but because every list, or each list may have
12 differed a little bit it is impossible to tell you
13 that, to tell you a precise number, everybody had a
14 little different number.

15 Q. I gather that you had said
16 yesterday that at the very beginning, in September,
17 at the very beginning of your study you realized that
18 you had a need for consultants with particular
19 expertise to help you in your epidemiology study.

20 (ANSWERS BY DR. SMITH:)

21 A. To help us in the pharmacologic
22 assessments and in the toxicologic assessment and in
23 the clinical cardiologic assessment.

24 Q. In other words, to provide you
25 with the raw data to fit into your study.

A. Not so, not to provide us with



(ANSWERS BY DR. SMITH:)

the raw data - well, to provide us with assessments which were then to be used in the studies that were constructed, yes.

Q. Now, when you choose the consultants and ask them to begin their task, I gather that the consultants were not blinded as to the date of death.

(ANSWERS BY DR. BUEHLER:)

A. That is correct.

Q. So in other words the epidemic period by this time had been defined as July, 1980 to March, 1981.

A. That is correct.

Q. And the consultants that you were using then knew the parameters of the epidemic period.

A. That is correct.

Q. And so they knew that the death was or was not within the epidemic period.

A. That is correct. However, as far as Dr. Nadas' study is concerned, he in reviewing his results with us apparently took pains to not look at dates, but obviously from a methodologic point of view, that is certainly an impure point, but



1 (ANSWERS BY DR. BUEHLER:)

2 Dr. Nadas was aware of the dates in question, that
3 is correct.

4 Q. And just the very term, "epidemic
5 period" to the lay person not trained in epidemiology
6 sounds suspicious.

7 A. I don't know if we used the
8 word "epidemic". We certainly had -- the consultants
9 certainly were aware of the nature of the problem
10 and the nature of the question that they were being
11 asked to address.

12 Q. I gather from what you have said
13 it is a valid criticism that there was a possibility
14 of bias in the fact that your consultants knew of
15 the date of death.

16 A. Yes.

17 Q. And that is called an expecta-
18 tion bias?

19 A. You could use a number of dif-
20 ferent words to describe types of bias, it is a
21 potential type of bias.

22 Q. It is certainly not an ideal way
23 to design a statistical study.

24 A. That is correct.

25 Q. In addition, one of your
consultants, Dr. Kauffman, had been retained by the



1
2 (ANSWERS BY DR. BUEHLER:)

3 authorities in Ontario in August of 1982 before you
4 retained him.

5 A. (ANSWER BY DR. SMITH) That
6 is correct, yes.

7 Q. And I gather that gave you
8 some concern.

9 (ANSWERS BY DR. BUEHLER:)

10 A. Our understanding was that
11 Dr. Kauffman was one of the best authorities, our goal
12 was to get the best interpretation that we could.

13 Q. In terms of expectation bias,
14 or just plain bias, did his retainer by the
15 authorities in Ontario give you concern?

16 A. No. Dr. Kauffman did not look
17 at the non-epidemic deaths with the exception of the
18 one we have mentioned, the child that died at the end
19 of June, 1980, but his evaluations were not a part of
20 the epidemic versus non-epidemic deaths comparison.

21 Q. But in his view of the epidemic
22 deaths.

23 A. Yes.

24 Q. Were you aware that he had met
25 with members of the Metropolitan Toronto Police and
knew that they were investigating homicide?



1
2 (ANSWERS BY DR. BUEHLER:)

3 A. Yes.

4 Q. Before he did his work for you?

5 (ANSWERS BY DR. SMITH:)

6 A. Yes. We so stated yesterday
7 that that was a concern to us that he had been re-
8 tained by the police, and we took great pains to
9 clarify what his role would be in our study; what
10 information he would use; and what our relationship
11 with each other would be, both with the police, Dr.
12 Kauffman and us.

13 Q. Were you aware that Dr. Kauffman
14 knew which cases were of most interest to the police
15 that is found in volume 74, pages 6314 and page 6315
16 of Dr. Kauffman's evidence.

17 (ANSWERS BY DR. BUEHLER:)

18 A. Yes, we knew he had met with the
19 police, although we didn't know exactly what informa-
20 tion they had given to him, etc.

21 Q. And did you know before he did
22 his work for you when he reviewed his charts he
23 spent unequal amounts of time on the charts and
24 spent more time on the suspicious list, and that is
25 found on page 6315.

MR. YOUNG: I don't have that page in



1
2 ANSWERS BY DR. BUEHLER:)

3 front of me, but I wonder if Ms. Symes would be good
4 enough to tell us which review Dr. Kauffman was
5 talking about at that time, whether it was a review
6 that he conducted for the police or whether it was
7 a review he conducted for the Center for Disease
8 Control.

9 MS. SYMES: He conducted one, the
10 evidence was he was in Toronto once to look at the
11 charts and he did it for both purposes.

12 MR. YOUNG: Well, what was that
13 reference again, Ms. Symes?

14 MS. SYMES: Page 6315.

15 MS. CECCHETTO: The volume?

16 MS. SYMES: Volume 74.

17 Q. Were you aware that he came to
18 Toronto once to review the charts?

19 THE COMMISSIONER: I think we should
20 hold it for just a moment. Perhaps if you will read
21 it, Ms. Symes, that will put the opposition at ease.

22 MS. SYMES: Certainly, Mr. Commis-
23 sioner. At the bottom of page 6314, sir.

24 "Q. And before you came on November
25 19, 1982 did you know -- had you had
any discussion with either the Crown



Smith, Buehler,
Wallace, Kusiak
cr. ex. (Symes)

(ANSWERS BY DR. BUEHLER:)

attorney or the Police as to which of the 36 babies were in their opinion suspicious or most suspicious, whatever terminology?

A. I had asked them to facilitate my review and to make most efficient use of my time, which ones they would like me to review in detail first, and in that sense they gave me a list of eight or ten that they wanted me to look at.

Q. Most particularly?

A. Yes.

Q. You told us in fact you divided that single day not equally among the 36?

A. No, I am not talking about that day, I am talking about earlier.

Early on I talked with Mr. Wiley and some of the police staff and I asked them for some -- because we had a large number of babies and I said give me some priority list and I will look at those first. And so I got a list of,



(ANSWERS BY DR. BUEHLER:)

I don't remember how many, but 8 or 10 babies that they wanted me to look at first."

And then he was asked if he could tell which of the babies were on the 8 to 10. He says over on page 6316 that he has a handwritten note and that he couldn't particularly find it, and I don't think he ever located which particular 8 to 10 of those babies; but continuing on page 6316 he says that it was either 8 or 10 and he is not sure which particular babies.

A. What is your question then arising out of that?

Q. Were you aware that when Dr. Kauffman came to review the charts for your purposes, that is the one day he came in November, 1982, that he had received, or had discussions with the police as to which babies they were most particularly interested in, some 8 or 10?

A. (DR. SMITH:) It was not something that we specifically discussed, so I was not aware of that, I cannot remember otherwise.

Q. Does that give you concern, heightened about expectation by it in his review?



1
2 (ANSWERS BY DR. BUEHLER:)

3 A. I think it is certainly not un-
4 expected that he might have spent more time on some
5 charts than others. The reason for that is that
6 for some children there was a tremendous amount of
7 information available and for other children it was
8 very scant. I think that for the intent of Dr.
9 Kauffman's review the purpose that we hoped he would
10 accomplish was accomplished; I know that does
11 not concern me in terms of his review which as far
12 as we were concerned was to provide us with the best
13 assessment of all the available digoxin informa-
14 tion.

15 Q. Let me ask you the question in
16 a different way. Is it good epidemiology technique
17 to have one of your consultants retained by the
18 Metropolitan Toronto Police and have advance knowledge
19 before he reviews the materials for your purposes?

20 (ANSWER BY DR. WALLACE:)

21 A. Could I just say Dr. Kauffman
22 used a strict set of criteria to make the judgments
23 that he gave to us, and because he had set out
24 how he would make his judgments I think this
25 diminishes any claim of bias.



1
2 (ANSWERS BY DR. BUEHLER:)

3 A. In strict answer to your
4 question, yes, that is less than ideal.

5 Q. Now, what you were essentially
6 asking the consultants to do was to engage in a
7 subjective evaluation of the charts.

8 A. We asked Dr. Nadas to provide
9 his clinical impression as a cardiologist, which is
10 obviously an impression he subjectively
11 based on his expert review.

12 Q. The one thing if anything we
13 have learned from this case so far is that there
14 are no black and whites in medicine, it is all shades
15 of grey, is that fair, there are not absolutes?

16 A. (DR. SMITH:) Clinical medicine
17 is applied epidemiology.

18 Q. Is epidemiology also shades
19 of grey?

20 A. (DR. SMITH:) Yes, there are
21 shades of statistical significance.

22 Q. Now, when a consultant, be he
23 or she a cardiologist, or a pharmacologist, or a
24 pathologist, make assessments from clinical --
25 let's say from charts and other clinical data, I
gather that there is associated with this task a



1
2 (ANSWERS BY DR. BUEHLER:)

3 chance of error, a risk of error.

4 A. Of course.

5 Q. And I gather that there have
6 been in the literature studies as to how reliable
7 such consultants are in terms of taking the same
8 information and putting it into the same categories.

9 A. (MR. KUSIAK) I think we can set
10 our example compared to cardiologists and classifying
11 characteristics of the patients in the hospital.

12 Q. That was Dr. Rowe and Dr.
13 Freedom, wasn't it?

14 A. (MR. KUSIAK) As I recall, yes.

15 Q. I gather that they were to take
16 these 807 patients and put them into 16 categories,
17 is that right?

18 A. (MR. KUSIAK) I think it was a
19 smaller sample, I think it was seven.

20 DR. SMITH: The original sample I think
21 was 50.

22 Q. 50. Do you know in what
23 percentage they disagreed?

24 A. (MR. KUSIAK) Not -- not as I
25 recall.

DR. SMITH: I don't remember.



1

2

MR. KUSIAK: As I recall there was

3

some trend along the diagonal but I suspect there was

4

a fair amount of scatter, I think there was a fair

5

amount of scatter, that was my impression.

6

Q. Unfortunately, that answer has

7

to be translated into common ordinary English.

8

MR. KUSIAK: There was some agree-

9

ment between the two but there was also some other
disagreement.

10

Q. More than 50% disagreement?

11

MR. KUSIAK: I can't recall,

12

I'm talking about impressions.

13

DR. SMITH: I can't recall.

14

Q. But if two consultants sit down

15

to do the task that you assigned to Dr. Rowe and Dr.

16

Freedom, as epidemiologists, do you expect to get

17

A. (DR. WALLACE) You would never

18

expect 100% consistency.

19

Q. What consistency do you hope

20

for?

21

A. (MR. KUSIAK) Well, one expects

22

as large as possible, I can't really be sure on it,

23

but I think there are techniques for reducing the

24

amount of disagreement, if you compare

25



1
2 the three categories that we used in this study
3 with the 16 categories that we used in the previous
4 study, one would expect more, finer categorization
5 than the gross one.

6 Q. Even with the gross one that
7 you finally resorted to, whether it be five for the
8 pharmacologist, or 2 times 3 each for the cardio-
9 logist, what percentage of disagreement is normal,
that is expected?

10 A. (MR. KUSIAK) I'm sorry, I
11 can't answer that question.

12 Q. Is it as high as 15%?

13 A. (MR. KUSIAK) I'm sorry, I can't
14 answer that question.

15 Q. Do you have any -- does anyone
16 else on the panel have any experience with dif-
ferent consultants doing the same rating?

17 A. (DR. BUEHLER) If Dr. Heath
18 is here on Monday, I think he might answer that
19 question.

20 THE COMMISSIONER: I don't like to play
21 a part, but I wasn't asked, we have some experience
22 right here.
23
24
25



M/ak

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

MS. SYMES: Q. Exactly, exactly.

I gather though that in terms of two consultants trying to establish a criteria that you didn't choose to do that?

(ANSWERS BY DR. BUEHLER)

A. No.

Q. That is a way isn't it of reducing the variability?

A. Yes, it is an issue that we discussed.

Q. Why did you choose, when in fact you had two consultants that gave you different views, to discard one consultant?

A. I'm sorry, I don't understand your question.

Q. You would agree with me that it is preferable in design to have more than one consultant doing the rating, that would be more than one pharmacologist, more than one cardiologist and more than one pathologist, that is more ideal than the design that you used.

A. We were operating under some practical constraints that I think were a consideration in some of the decisions we made.

Q. But do you agree that when you



1

2

(ANSWERS BY DR. BUEHLER)

3

make that choice to go with one you are sacrificing
accuracy?

4

5

A. Yes.

6

7

Q. You are also sacrificing
reliability, that is, the reliability that we can
place upon conclusions in your report?

8

9

A. I think the issue of
reliability depends on the competence of the
consultants.

10

11

Q. Isn't that another issue as
well?

12

13

A. That is an issue, yes.

14

15

Q. But even talking about the
same issue, that is, where you have reliable, that
is, good quality consultants, your study is improved
if you have more than one doing the rating?

16

17

A. As a generality, yes.

18

19

Q. I also understand that there
is a further problem and, that is, that this same
consultant reviewing the same case more than once
may come to a different conclusion?

20

21

A. That is certainly a possibility.

22

Q. That happens?

23

A. Yes.

24

25

I.2



1

2

(ANSWERS BY MR. KUSIAK)

3

Q. And in fact in the literature
of epidemiology or general statistics, that is a
well known phenomena.

6

A. Yes, I am well aware of it
with regard to codings of x-rays.

7

8

Q. Okay. For example, in the
one about the coding of x-rays that is -- who reads
x-rays, do you recall?

9

10

A. (Dr. Smith) Radiologists.

11

12

Q. Radiologists. What is the
percentage of disagreement amongst radiologists?

13

A. It depends who you are talking
about but sometimes it is quite large.

14

15

Q. Tell us how large.

16

A. I wouldn't know. In some
cases there is a surprising amount of disagreement.

17

Q. As high as 50 per cent?

18

A. Perhaps.

19

20

Q. So, that is presumably two
experienced doctors reading the same x-ray and
coming to different conclusions?

21

22

A. Yes.

23

24

25

Q. Or, also, the same cardiologist
reading the same x-ray twice and coming to different



I.3

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY MR. KUSIAK)

conclusions?

A. Yes, that is surprising. It surprised me when I first came across that result.

Q. But I mean it is not in any way that they are doing a bad job or they are not trying their best, that is just one of the things that happens when a clinician attempts to categorize clinical data. Is that true?

A. Well, I can only speak to classifying x-rays, yes.

Q. In this particular design did you have any of your consultants rate the same chart or pieces of information more than once to check what your intra rater reliability was?

(ANSWERS BY DR. BUEHLER)

A. No.

Q. Why?

A. With such a limited number of charts.

Q. Well, you had 871 of them.

A. We are talking about a different study. Which study are you talking about?

Q. Any one. Did you do it in any portion?



I.4

1

2

(ANSWERS BY DR. BUEHLER)

3

A. No.

4

Q. All right. Can I ask you why?

5

A. As far as Dr. Nadas' review

6

is concerned, I think that Dr. Nadas was here for

7

one weekend only and certainly in that period of

8

time he would be aware of seeing a chart twice. I

9

think the same could be said for the types of

10

reviews that Dr. Kauffman and Dr. deSa did. If you

11

look at how they organized their reviews it wouldn't

12

be possible to do that. So, within the constraints

13

of practicality it wasn't possible for the studies

14

that Dr. Nadas, Dr. Kauffman and Dr. deSa did. I

15

think that you raise a good point concerning the

population study.

16

Q. And was it simply time and

17

money constraints, had you deleted that mode of

18

reliability that can be put into a statistical study?

19

A. It wasn't a money constraint.

20

I think you have made your point that you have

demonstrated a flaw in that study.

21

Q. In your device of Category A

22

you have each consultant devising his own criterion

23

with respect to what will fit in these various

24

levels, is that correct?

25



I.5

(ANSWERS BY DR. BUEHLER)

A. As long as we are on the issue of Category A, B and C, I think it is extremely important to realize that those categories are by nature somewhat arbitrary. The intent of Category A -- in general the intent of our categories was to have broad categories; Category A, the intent of that was any child who met an extreme answer to any one of the questions that we put to the consultant in terms of we have defined what we felt the extremes were; Category B is an intermediate. We were asking what criteria can we use to order these children during this period using what we felt was the important findings. Category B is certainly a very intermediate category based solely on time of death. It is clearly within the realm of possibility that just because a child died at a certain time, just because of that it is certainly possible that there is nothing that says that that death per se is due to digoxin intoxication. But it was one of the differences that distinguished epidemic from non-epidemic deaths. So, it was a broad general category.

As you look at our study in terms of categories you could put together a number of



(ANSWERS BY DR. BUEHLER)

different categories. This is one that we choose.

Q. Okay. In terms of your defining your statistical design of Category A, your cardiologist had two criteria of three levels each.

A. The design of Category A wasn't a statistical design, it was simply an attempt to put the children in three broad groups.

Q. I want to come in terms of why you did it that way but I just want to clear up what exactly was the elements of Category A.

A. Sure.

Q. The cardiologists had two categories of three levels each.

A. Let me turn to that page. Okay, Category A was based on two of the cardiology scores, that is correct.

Q. Okay.

A. The timing of death with respect to clinical status and the mode of death with respect to possible digoxin intoxication.

Q. Your pharmacologist had one scale with five levels on it.

A. That is correct, and a score



I.7

(ANSWERS BY DR. BUEHLER)

of greater than or equal to 3 was the criteria we used.

Q. And your pathologist I gather had either yes or no, that is, one scale with two levels on it.

A. That is correct.

Q. Either they were sufficient to account for death or not.

A. That is correct.

Q. And there was in your design then, or your permitting of the consultants to design their own criteria fitting the data into it, there was no attempt to make them parallel.

A. That is correct. I think you can find examples that demonstrate that.

Q. Given that you have said that inter-consultant consistency is a good thing in statistics, that is, the consultants agree, why did you choose that Category A/B, one of the consultants rate the death as suspicious as opposed to, say, two out of three rate it?

A. We could have used any different types of criteria for putting together Category A. The intent for the purposes of this study was for the



I.8

(ANSWERS BY DR. BUEHLER)

categories was to be as broad as possible, to have three large categories. If you look at this series of 36 deaths you could focus from 36 down to 1 using any different range of criteria.

As I mentioned, any road mark that you used to break that into three groups is necessarily somewhat arbitrary but it is based on the general nature of our findings.

Q. Did you consider having category - I don't care whether you call it Category A -- but the most suspicious of your category be at least two of three consultants agree?

A. No.

Q. You didn't draw on any data using that as a model?

A. You could look at the deaths.

Q. But the question is, did you?

A. Well, we looked at the deaths after this using different combinations. For example, if you looked at the way we describe it we say of the 18 Category A deaths/^{there}were seven that had a score greater than or equal to three by Dr. Kauffman and so on. So, if you look at associations with Hospital personnel and deaths, in general the



I.9

(ANSWERS BY DR. BUEHLER)

conclusions that you would come to would be relatively the same if not identical no matter how you chalked up those categories unless you cut it down to one.

Q. Have you done statistics where two out of three consultants must agree?

A. No.

Q. Now, during the epidemic period I gather that from Mr. Ortved's questions would you agree that the patients who died were younger during the epidemic period?

A. That is correct.

Q. And I gather we learned that younger patients tend to have more severe, more heart problems or that the severity - the heart problems that they have are more severe for them?

A. That is a question that you would need to address to a cardiologist.

Q. Is anyone else...?

Did you make any attempt to see if other pediatric cardiology centres were experiencing the same kind of phenomenon, or had experienced the same phenomenon during an equivalent epidemic period at their institution?

A. No.



I.10

(ANSWERS BY DR. BUEHLER)

Q. I gather that there certainly are such institutions, your consultants came from such institutions?

A. Yes, there are other pediatric hospitals.

Q. Would that have been a good statistical technique to have incorporated into your study?

A. In terms of this study we felt that we were dealing with a problem that, in terms of the answers that we wanted to obtain, we could obtain those answers with information from this hospital.

Q. But isn't that assuming that the difference that occurred at the end was due to something that occurred to the children after they had entered the Hospital?

A. We did attempt to look at the population of children entering the Hospital.

Q. Yes. But the question is, if it is possible that the results, that is, the deaths, are due to a pre-existing condition before the children entered the Hospital, then shouldn't you have looked elsewhere in other centres to see



I.11

(ANSWERS BY DR. BUEHLER)

if those centres were experiencing a similar phenomenon?

A. You are getting to the issue of - there are several ways to address that issue or there are other ways of addressing the issue; one is the issue of calculating adjusted rates or the issue of looking at severity of illness in the population, in other words, was it a more severely ill population, was there something happening in the population of children who were being admitted independent of what may have happened at the Hospital.

Q. Yes.

A. I believe yesterday we went over that part of the report and some of the problems that we encountered with that part of the report.

Q. But you only compared the population entering the Hospital for Sick Children during the epidemic period to the population entering that same Hospital at other periods. That was your only test of whether or not there was something occurring in the population at large.

A. That is correct.



I.12

(ANSWERS BY DR. WALLACE)

Q. Would it have been more reliable and a better statistical technique to have compared the population entering the Hospital for Sick Children during the epidemic period to the population entering other similar centres.

A. Could I just say something.

Q. Yes.

A. As you know, we used Dr. Nadas who came to us from Boston's Children's Hospital and he was certainly not aware of any epidemic of deaths in the cardiology wards of that hospital.

A. (Dr. Buehler) So, we made no formal study of deaths in any of the other hospitals.

A. (Mr. Kusiak) Nor were we aware of any increase in infant mortality in the Province at that time.

Q. Infant mortality?

A. (Mr. Kusiak) Yes.

Q. Would you agree with me that the number of cardiac abnormalities that we see in these patients in the Hospital for Sick Children are quite rare in the population?



24jan84 2

J

EMTrc

1

(ANSWERS BY DR. BUEHLER)

3

A. (Dr. Smith) I am not sure

4

that I know what you are asking us to compare. Would
you be clearer?

5

6

Q. The question is whether or

7

not there was existing in the population some
abnormality, some disease, some event, and that was
the cause of the death as opposed to anything that
occurred once they had been admitted to The Hospital
for Sick Children?

10

11

A. In general we approached our

12

study step by step, and given the nature of the
information that we had we didn't feel that would
offer an explanation as to why children were more
likely to die between midnight and 6:00 a.m. on
Wards 4A and 4B during that nine-month period.

15

16

Q. But isn't it possible that

17

all we may be observing with respect to the deaths
on Wards 4A/4B is simply a reflection of something
which occurred in the population at that time?

18

19

A. That is certainly a possibility.

20

Q. You didn't explore that?

21

A. No.

22

A. (Dr. Wallace) We didn't

23

explore it because it really is an unlikely

24

25



J2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

possibility. We know of no disease condition which
would predetermine death between the hours of mid-
night and six. !

Q. But one of the things we are
discovering is that Medicine is a rapidly advancing
field in which there is a great deal to learn in
all areas, isn't there?

A. (Dr. Wallace) That is
extremely true.

Q. And there may very well be
in the future new information that could explain
these deaths?

A. Our study was based on
existing information.

Q. I agree, but that is a
possibility?

A. Anything is a possible.

Q. But you didn't explore with
respect to --

A. We explored a number of
possibilities, but that is one that we did not
explore.



J3

1

2

(ANSWERS BY DR. BUEHLER)

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Q. Now, once a child was admitted to The Hospital for Sick Children I gather the other thing that you tried to do is eliminate possible factors that could have influenced the rate of death? That is what an epidemiologist does?

A. We tried to determine if there was something happening in the Hospital which might affect mortality rates on that ward.

Q. And one of the changes from the pre-epidemic period to the epidemic period was a change in wards?

A. Yes.

Q. That is they went from Ward 5A to Wards 4A/4B?

A. That is correct.

Q. I gather you learned that there was an associated increasing number of beds?

A. Yes, we were told there was an increase from 38 to 42 beds.

Q. And that there was an increase in the number of infant beds?

A. I recollect that that is correct, but I can't recall that exactly.

Q. That is the information that



J4

1

2

(ANSWERS BY DR. BUEHLER)

3

we have had.

4

A. (Dr. Smith) Yes, there was

5

an increase in infant beds.

6

Q. Yes, in infant beds.

7

A. (Dr. Smith) Yes.

8

Q. And that fact by itself would

9

mean there was a change in the care patterns between
the pre-epidemic period and the epidemic period,

10

would you agree?

11

A. Yes. There was an increase

12

in the number of beds for small babies. There was --

13

we learned that there was a change in the organization
of nursing care.

14

Q. In fact one of the changes

15

would be that now for infants they require essentially

16

constant nursing care throughout the 24-hour period?

17

They don't sleep as older children do?

18

A. We are not here to comment on

19

the nursing care particularly.

20

Q. I am asking you were you

21

advised the nursing care changed?

22

A. Yes. We were told that there

23

was a change in the organization of the nursing
teams.

24

25



J5

1

2

(ANSWERS BY DR. BUEHLER)

3

Q. All right.

4

A. From -- in other words a doubling in the number of teams to accommodate the two new wards.

5

6

7

8

Q. Now, with the increase in the number of infant beds, obviously that would probably result in the possibility of an increase in younger children?

9

10

11

12

A. (Dr. Smith) It may or it may not. It would depend on the type of child that was being referred to this tertiary care centre.

13

14

Q. All right. But the potential then to have younger children was increased by 4, four more beds, four more infant beds?

15

16

A. Four more beds from 38 to 42, that is correct.

17

18

19

Q. That is right. And the children who died you told Mr. Ortved were obviously sick?

20

A. As judged by --

21

Q. By the doctors.

22

A. By our consultants, yes.

23

24

25

Q. And I think in answer to his question that sick children, very sick children,



J6

1

2

(ANSWERS BY DR. BUEHLER)

3

did you say may or may not have IVs or was it the
other way around?

4

5

A. (Dr. Smith) It was the other
way around, that if they have an IV it may or may
not be that they are very ill. It may be for a
condition which is not terribly severe in the overall
disease.

6

7

8

9

Q. Could I ask you the other
way then? Do most sick children have IVs?

10

11

A. That requires expert testimony.
That is not based on the data for our report.

12

13

THE COMMISSIONER: I am no expert,
but it seems to me that those children whose deaths
were inevitable generally didn't have IVs. Isn't
that what the statistics would show?

14

15

16

DR. BUEHLER: If you would like --

17

18

THE COMMISSIONER: Well, I may be
wrong on that but the greatest percentage of no IVs,
I think - now I may be wrong, but that was my
impression - would be with what we call Dr. Rowe's
inevitable death children.

19

20

21

MS. SYMES: It perhaps would be more
useful if we focused on the Category A deaths which
are not those type of deaths.

22

23

24

25



Smith, Buehlér
Wallace, Kusiak
cr.ex. (Symes)

1
J7 2 (ANSWERS BY DR. BUEHLER)
3 THE COMMISSIONER: All right.
4 MS. SYMES: Q. Amongst the Category A
5 type of death as defined by your consultant is it
6 reasonable to expect that those sick children would
7 have IVs?
8 A. I can't answer that for every
9 individual, but it is certainly reasonable to expect
10 that a sick child would have an IV.
11 Q. In your roommate study - I
12 just want some of these things obvious.
13 A. Yes.
14 Q. For example on page 19 when
15 you were going through the characteristics you
16 found that on page 19, the paragraph you have labelled
17 No. 2 --
18 A. Yes.
19 Q. -- in comparing those who died
20 with their roommates that they were younger of age
21 (we talked about that) but that they had cardiac
22 catheterization.
23 Isn't that more logical; that is
24 again not all catheterizations are necessarily most
25 sick, but isn't it true that most sick children are
likely to have had catheterization?



J8

1

2

(ANSWERS BY DR. BUEHLER)

3

A. I can't answer that question.

4

Q. Is it reasonable that the oxygen, the fact that the children who died required oxygen, isn't that -- doesn't that follow because they were sick?

7

8

A. If you look at the bottom of that paragraph we state:

9

10

11

"However, because all of these variables may be associated with severity of illness..."

12

Indeed all of those variables may be associated with severity of illness.

13

14

15

16

17

18

Q. So that all of these that you have gone through, cardiac catheterization, oxygen, the fact that they were not being fed, were all consistent with the fact that they were sick? In other words it was because they were sick that these things occurred?

19

20

A. That is possible. We say all of those variables may be associated with illness severity.

21

22

23

24

25

Q. And in Dr. Haynes report on page 19, in paragraph 2 and paragraph 3, he said:

"We feel that this is..."



Smith, Buehler
Wallace, Kusiak
cr.ex. (Symes)

J9

1

2

(ANSWERS BY DR. BUEHLER)

3

This is towards the end of the second paragraph.

4

5

6

7

8

9

10

"We feel that this is understated
to an important degree: the use of
otherwise unmatched roommates is
demonstrably inadequate in controlling
for severity, as shown by the findings
that cases were younger and required
more oxygen, tube or IV feedings,
intravenous lines, IV medications."

11

And in paragraph 3:

12

13

14

15

16

17

18

19

20

"Our conclusions. This study is not
useful in determining the reasons
for increased mortality during the
July 1980-March 1981 period, save
for confirming that patients who
died were more likely to be young
and severely ill as judged by the
amount of nursing care and special
treatments they received in the course
of their care."

21

22

A. I believe that Dr. Haynes'
conclusion in paragraph 3 is very similar to the
conclusions that we drew from that part of the study.

23

24

25

Q. In other words, your roommate



J10

1

2

(ANSWERS BY DR. BUEHLER)

3

study really doesn't add anything to your results?

4

A. It adds very little.

5

6

7

8

9

Q. Now in your -- in page 7 of your report on the utilization or overutilization of the Intensive Care Unit, I gather that you have already established that during all nine months of the epidemic period the Intensive Care Unit was used to greater than desired capacity?

10

11

A. Desired as defined by the Hospital itself.

12

13

14

Q. Yes. And the practical result of that would be that children would be returned to the ward earlier perhaps than desirable?

15

16

17

18

A. That was a concern that we had in addressing this study, yes.

19

20

21

22

23

24

25

Q. And that it might be difficult on occasion to get a patient who was ill into the ICU?

A. Certainly we were concerned about the general accessibility compared to the ICU. I believe, however, as Dr. Wallace mentioned, in reviewing the charts we did not see documented evidence of that as a problem. However, we were not looking for that as one of our review criteria.



J11

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

Q. Did you talk with any of the nurses or doctors as to whether or not this was a real problem during the epidemic period?

A. We spoke to Dr. Barker. His impression -- what he told me was that he didn't think that the criteria for transfers back and forth between the ward and the ICU had changed.

Q. Did that then follow that he didn't perceive that there had been a problem?

A. All I can tell you is what he told me.

THE COMMISSIONER: Well, I'm sorry, what he told you I don't find understandable.

DR. BUEHLER: Okay.

THE COMMISSIONER: What did he tell you?

DR. BUEHLER: My recollection is that Dr. Barker told me that the criteria -- in other words the indications and the -- well, the criteria --

THE COMMISSIONER: Criteria; perfectly good word, yes.

DR. BUEHLER: That the criteria for transfers back and forth from the ward to the ICU had



J12

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

not changed.

THE COMMISSIONER: Yes, but if he were here I would say that wasn't answering the question.

The question was was there some problem in getting the children in and were they getting out too fast from the ICU? Did you discuss that problem with him?

DR. BUEHLER: Well, my understanding is that they held to their criteria in terms of the conversation I had with --

THE COMMISSIONER: Well, they were able to hold to their criteria. That would mean that they didn't have any trouble. Is that what they are saying?

DR. BUEHLER: That is my recollection of my conversation with Dr. Barker.

THE COMMISSIONER: Dr. Wallace, did you --

DR. BUEHLER: But I think it would be best for Dr. Barker to speak for himself.

THE COMMISSIONER: Yes, but the trouble is every time we call a witness he is here for weeks, so we hesitate to do that, and we are allowed to take hearsay -- Dr. Wallace, did you want



J13

1

2

(ANSWERS BY DR. BUEHLER)

3

to say anything?

4

DR. WALLACE: No, I did not speak

5

to Dr. Barker.

6

THE COMMISSIONER: No, I thought
you were volunteering something about the --

7

DR. WALLACE: Sorry, I am unable to.

8

THE COMMISSIONER: Well, all right.

9

Thank you.

10

MS. SYMES: Q. I gather that you

11

were aware of discussions with somebody that rooms

12

immediately adjacent to the nursing station were

13

used for the youngest and sickest of the children?

14

A. Yes, we were well aware of

15

Q. So that if there were a

16

problem in getting patients to the ICU, and that

17

evidence may have to come from other people, I

18

presume that it is logical that those babies would

19

come from the rooms adjacent to the nursing station.

20

That is just obvious, isn't it?

21

A. Yes, I would think so.

22

Q. Similarly that if patients

23

were returned early from the Intensive Care Unit

24

it is logical that is where they would be placed?

25



J14

1

2

(ANSWERS BY DR. BUEHLER)

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A. My understanding is that young ill patients would go to one of those two rooms. I believe that older patients would not come to those two rooms, but that you would have to check with the Hospital.

Q. But since the deaths we are concerned with were younger patients, let's assume that.

If then the overcrowding in the ICU was a factor, then it is reasonable or logical that the deaths are most likely to have occurred in the two rooms adjacent to the nursing station?

A. If you are going to assume that death occurs in severely ill children and if severely ill children are likely to be in one of those two rooms, I think that is a reasonable assumption.

Q. And both of those assumptions with the facts on which you were basing your study?

A. Pardon?

Q. You were told with respect to the second, that the very young and very sick children were placed in the two rooms adjacent to the nursing station.



J15

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

A. Our study was conducted with that knowledge.

Q. On page 8 you talk about referral pattern to The Hospital for Sick Children.

A. We looked at referral patterns for surgically treated patients.

Q. I am not sure what you mean by referral pattern.

A. (Dr. Smith) Where the patient came from, what geographic area.

Q. Was there any other criteria that you used other than geographical?

(Dr. Smith)

A. / No. It was place of residence and there were several divisions. It was either Toronto, southern Ontario, northern Ontario, Manitoba, elsewhere Canada, other parts of the world.

Q. Did you consider in the patterns of referral looking at the age of referral as a criterion?

A. No.



K/DM/ak

1
2
3 THE COMMISSIONER: I am sorry, what
4 was that question looking at the --

5 MS. SYMES: Q. Age of referral as
6 a criterion.

7 (ANSWERS BY DR. BUEHLER)

8 A. Let me tell you the reason
9 why we looked at the geographic patterns of referral.
10 We were told by the Hospital that there was a
11 cardiologist in Manitoba who had changed his referral
12 patterns and was sending more patients to the
13 Hospital for Sick Children as opposed to another
14 hospital. They felt that that was a potentially
15 important contributor to death at the Hospital for
16 Sick Children, so we examined that.

17 Q. The age of referral to the
18 Hospital could be an indicia of the seriousness of
19 the illness of the child referred, would you agree?

20 A. That is a possibility.

21 Q. That is the younger the child
22 is referred to the Hospital the more likely the child
23 is seriously ill and requiring immediate attention?

24 (ANSWERS BY DR. SMITH)

25 A. That is not necessarily so.
One would have to look at the age of all the children
that entered the Hospital over time to see what these



(ANSWERS BY DR. SMITH)

patterns are.

Q. And you didn't do that I gather in the referral pattern?

A. Not in the referral pattern study. We were only looking at the geographic source of patients, of surgical patients because of the question that the operating rooms were in fact being over used at that time.

Q. On page 9 you took a sample of the ward population, and your sample was 837 patients, and I gather that the requirement to be in the population from which you took the sample was that the patient had been admitted directly to either Wards 4A or 4B?

(ANSWERS BY DR. BUEHLER)

A. That was an external and in-house requirement based on the type of information that was available.

Q. So that would not include obviously those that had been admitted first to the NICU or the ICU?

A. That is correct.

Q. We understand that maybe as many as 10 per cent of the ward population was first



(ANSWERS BY DR. BUEHLER)

admitted to the NICU?

A. (Dr. Smith) Not necessarily
to the NICU, it would be --

Q. To both?

A. (Dr. Smith) It would be to
the NICU or other parts of the Hospital, any other
part except 4A/B.

Q. Those children that came from
the NICU would be younger children by their very
definition, wouldn't they?

A. Of course.

Q. So when you drew your sample
from your population it would be older than the true
population that existed on the ward?

A. (Dr. Smith) That would depend
on the number of that unsampled population that
came from NICU. We know that the total number was
approximately 10 per cent. Of those we don't know
how many came from NICU exactly. So we don't really
know what influence that would have on the overall
population age distribution.

A. May I add to that? I think
if you have a bunch of newborns that you are adding
to a population of children they may range in age



(ANSWERS BY DR. BUEHLER)

from less than a week to 20 years of age, that the addition of newborns to that population or younger children would lower the overall age of that population.

Q. So that the - all I want is the sample that was taken of the 837 patients was an older sample than the true population that you were trying to predict about?

A. That is correct. That is the problem that we attempted to address but we were unable to resolve.

Q. Now the problem, the statistical problem that faced you in fact was a problem that had many variables to it, do you agree, it was what is called a multivariate statistical problem.

A. In terms of which study?

THE COMMISSIONER: This is very interesting, and you can both agree with each other, but I gather, but I would just like to know, I haven't the faintest idea what you are talking about.

MS. SYMES: I was just going to come to that.

Q. Could you, Mr. Kusiak, explain the difference between univariate and multivariate?



1
2
3 (ANSWERS BY MR. KUSIAK)

4 A. I think Miss Symes is referring
5 to the fact that when we were comparing populations
6 what we did was we compared them one characteristic
7 at a time. We compared their ages, and we compared
8 their referral patterns, and then we compared their
9 races and then we compared their sexes, and then
10 we compared numerous other characteristics of the
11 populations. We made no attempt to do a multi-
12 variate analysis which would be to compare all of
13 these characteristics in one go.

14 We considered multivariate techniques
15 in our analysis, but we didn't follow through with
16 it because of the small number of cases we had and
17 the huge number of variables that had to be examined.
18 My experience of multivariate analysis is there
19 are a lot of assumptions that are somewhat difficult
20 to show non-compliance with.

21 For instance, if one wanted to
22 compare the mean ages and the numerous categorical
23 variables, or numerous continuous variables such as
24 age, et cetera, these things are measured out on a
25 category scale . on a continuous scale. One has
to assume that all these variables have a multi-
variate normal distribution, my understanding is



1
2 (ANSWERS BY MR. KUSIAK)

3 that is very - in doing these tests one would like
4 to show that that assumption is not invalidated and
5 that is a difficult task.

6 Q. Could we just go back a whole
7 quantum leap to the question the Commissioner asked
8 about multivariate?

9 A. Yes.

10 Q. Can I just see if I understand
11 it, that this, you were comparing populations here.

12 A. Yes, we were comparing say
13 the epidemic period and the non-epidemic period.

14 Q. And you can compare those
15 on one basis, one variable, that is for example age?

16 A. That is correct.

17 Q. But in fact the populations,
18 the two different populations had a whole bunch of
19 characteristics, that is age, sex, severity of
20 illness, catheterization, et cetera, and that is
21 called multivariable or multivariate?

22 A. If one wanted to compare all
23 of these characteristics in one statistical test
24 that will be called a multivariate situation.

25 Q. The question now is this was
in fact a multivariate statistical problem, that is



1
2 (ANSWERS BY MR. KUSIAK)

3 you were comparing two populations with more than
4 one variable, isn't that true?

5 A. Yes, there were two populations,
6 each of them had many variables.

7 Q. And the tests that you used
8 the Fisher, the Student "t" test and the chi-square
9 test --

10 THE COMMISSIONER: Are these to be
11 found somewhere?

12 MS. SYMES: These are the tests
13 that they particularly used in their analysis.

14 THE COMMISSIONER: Is this on some
15 page?

16 DR. WALLACE: Page 7.

17 THE COMMISSIONER: Page 7. Thank
18 you.

19 MS. SYMES: Q. These are the
20 only tests that you used.

21 A. That is correct.

22 Q. They are simple, sort of
23 first year statistics type of tests?

24 A. I agree, they are commonly
25 used tests.

Q. They are in the form that you



(ANSWERS BY MR. KUSIAK)

used them, all univariate tests.

A. That is correct, they are one thing at a time.

Q. On page 4 of Dr. Haynes' report there is a criticism.

THE COMMISSIONER: Which page 4?

MS. SYMES: The real page 4, the numbered page 4, not the summary, sir.

THE COMMISSIONER: Okay.

MS. SYMES: Q. In the middle paragraph, the only full paragraph, in the middle of that there is a statement:

"To the extent that it is reasonable to apply statistical analysis, it is clear that the data required more sophisticated statistical techniques for analysis than were used. Specifically, it would be more appropriate to use multivariate techniques (such as multiple range tests, multiple regression and multiple logistic regression, and discriminate function analysis) to avoid spuriously concluding that certain variables were



(ANSWERS BY MR. KUSIAK)

"associated with the wards being compared (false positive conclusions) and to avoid missing real associations (false negative conclusions)."

Do you agree with his criticism of your statistical technique?

A. (Dr. Buehler) I agree and I agree you didn't finish reading the paragraph.

Q. I agree. But do you agree that this was a multivariate problem and that the desired statistical technique was multivariate analysis?

A. No, I don't agree. I think when we were doing our statistics we were relying upon the expertise. I think first of all I will explain what Dr. Haynes is referring to if I can, or my understanding of what Dr. Haynes is referring to.

The situation may often happen that one compares one characteristic with another characteristic. It may well be that the characteristic being compared is really a co-relate for something else, which is really the cause of the difference between the two populations.

For instance - how can I think of a



1
2
3 (ANSWERS BY MR. KUSIAK)

4 simple example? For instance you may compare the
5 heights of two populations, you may have a sample
6 of school children, you may compare their heights
7 and you may want to see if the heights are different,
8 but really the characteristic that one is associating
9 with some outcome may not be height at all but weight.
10 So by pursuing your analysis you may conclude that
11 one population is different from another because
12 their heights are different, the health outcome is
13 different because the height is different and that
14 would be called a spurious association as I under-
15 stand it. When really in fact what the causative
16 agent that makes the health outcome is the weight.
17 Since weight and height are correlated the height
18 comes out as being correlated with the result. I
19 think that is the sort of thing Dr. Haynes is
20 referring to.

21 Now in our analysis these statistics
22 were presented to competent physicians who had some
23 understanding of the problem and would have some
24 understanding of the correlations between the data.
25 So we relied upon expertise of all the staff members
in assessing the data.

The other thing that comes out I think



(ANSWERS BY MR. KUSIAK)

is that - the other facet of the fact that we assume - that we did univariate tests which was to do with the techniques and the technical nature of it.

We assume that if we were comparing the ages of the two populations, or the heights or whatever, that there was an underlying normal distribution, in other words, there was one statistical population there spread around some - meeting place, sort of a standard deviation. It may be that each population is broken up into separate little populations each having its own normal distribution and it's own common meaning. The effect of ignoring that would be to somehow increase the variance that one uses in testing this hypothesis and therefore making it more difficult to show two differences. Is that clear?

Q. No.

A. In effect what happens if I have one population which is composed of a separate subset of population and really I have one distribution for less than five year olds and another distribution for greater than five year olds, they are quite different. I have another population that is similarly - has two sub-populations, less



(ANSWERS BY MR. KUSIAK)

than five and greater than five. If I ignore the fact there is really four little sub-populations and only compare one with the other I think it is more difficult to see the difference between the two.

Q. Mr. Kusiak, in Dr. Haynes' report he says, that if you use univariate, that is the test that you use, the Fisher "t", the Student "t" and the chi test on multivariate problems you may get false positives and you may get false negatives. Do you agree with him?

A. I absolutely agree.

Q. And do you agree that one way of eliminating that is to only use those results where there is a very high statistical significance. For example, if the probability is less than .01?

A. That is true.

Q. You didn't do that, did you?

A. I think our -- when the results were coming off the computer I think our staff were very impressed at the very small "t" values that were encountered in many of the comparisons that were much less than 1 per cent.

Q. But you have "t" values in



(ANSWERS BY MR. KUSIAK)

your table that are greater than .01?

A. Yes, there are some.

Q. And designed the whole report based on probability of 95 per cent, which is .05?

A. That is correct.

THE COMMISSIONER: No, I am sorry.

MR. KUSIAK: I agree.

MS. SYMES: 95 per cent is .05, 5 plus 95 is 100, Mr. Commissioner.

THE COMMISSIONER: I thought it was 5, not 05, perhaps I am wrong.

MS. SYMES: No, the probability is always 1 or less than 1, so it is .01.

THE COMMISSIONER: Oh, I see, yes, all right.

MS. SYMES: Q. That was the basis, Mr. Kusiak, wasn't it of your analysis that you use 95 per cent confidence limits or a probability of .05 as to whether or not an event was significant statistically?

A. That is right. I think our staff only considered, the consultants only considered the differences that were significant at the 5 per cent level. Of course, the final



1

2

(ANSWERS BY MR. KUSIAK)

3

results were based not solely upon statistical

4

results but upon the interpretation of the

5

facts.

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25



L
I/PS

1

2

(ANSWERS BY MR. KUSIAK:)

3

4

5

6

7

Q. But what Dr. Haynes is saying to you in his criticisms on page 4 is that when you use single varied analysis on multiple variate problems you've got to go to a much more rigorous level of probability. Am I reading his criticism correctly?

8

9

10

11

12

13

A. His criticism is correct but I think the point you are trying to make goes a little bit further and what is the effect of using a multi-variate technique as compared to a univariate technique, what is the consequence of doing that and I am not sure that you are bringing that out.

14

15

16

Q. Dr. Haynes says that it gives false positive conclusions and false negative conclusions and I thought you had agreed with him.

17

18

19

A. I agree with him, but one has to realize that this whole exercise is not based solely upon statistics but some interpretation of those statistics.

20

21

22

23

24

25

Q. I gather that you could have used your univariate analysis but then use multiple range tests provided that your probability was less than .01.



(ANSWERS BY MR. KUSIAK:)

A. That's true.

Q. That's one way of mixing the
two methods.

A. That's true.

Q. You didn't do that.

A. No.

Q. And in your bibliography you
list a paper that in fact is multivariate analysis,
an algorithm for multivariate analysis, is that
correct?

A. That's true.

Q. Your bibliography, sir, is found
on page ---

A. I am well aware it's the multi-
variate case control technique.

Q. You didn't use that.

A. We used that algorithm, of course,
it is also applicable when one has only one variable
in a multivariate technique.

Q. But you didn't use the algorithm
as outlined in that paper for multivariate?

A. We used that algorithm. That
computer algorithm was used.

Q. But for multivariate?

A. And it was used for one variable



(ANSWERS BY MR. KUSIAK:)

at a time.

Q. The algorithm though is for multivariate?

A. Well, I think Dr. Haynes would agree with me that if one has an algorithm when one considers P variables in it, P could be equal to 1. The number of variables considered in the algorithm could be 1 and the choice of the number of variables that one puts into the algorithm is up to the statistician and consultants.

Q. Was it your decision, sir, to use 95% confidence intervals and .05 as the level of probability?

(ANSWER BY DR. BUEHLER:)

A. That was a consensus.

Q. That was a consensus?

(ANSWER BY MR. KUSIAK:)

A. That was a consensus.

Q. Were you aware of the problems as outlined by Dr. Haynes in his report of doing it in his report of doing it this way?

A. We were well aware of the problems at the outset, but the problems seemed to evaporate when the results came in, that the P values in many



1
2 (ANSWERS BY MR. KUSIAK)

3 instances, the difference between the populations,
4 the probabilities associated with those differences,
5 were much less than 1%; much less than .1%, in fact.

6 MS. SYMES: Mr. Commissioner, I have
7 one last topic, could I ask that we take a break
8 now?

9 THE COMMISSIONER: Yes, by all means.
10 I just wanted to straighten out the statistics
11 for us. I take it you are moving on to something
12 else?

13 MS. SYMES: A different topic, sir.

14 THE COMMISSIONER: Yes, all right.
15 Until 2:30. Did you say one last? How long do you
16 expect to be?

17 MS. SYMES: 30 minutes, sir, at
18 most.

19 THE COMMISSIONER: Yes, all right.
20 That is a word to the wise, Mr. Knazan and the
21 absent Mr. Olah.

22 Yes, all right until 2:30 then.
23 ---Luncheon recess.
24
25



AA
/PS

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

---Upon resuming at 2:30 p.m.

THE COMMISSIONER: Yes, all right,
Ms. Symes.

MS. SYMES: I am wondering if counsel
for Dr. Buehler should be in the room.

THE COMMISSIONER: Oh, yes.

MS. SYMES: Q. At the beginning of
last day's evidence you provided us collectively I
suppose with Exhibit 325 which defines an epidemic
and an epidemic investigation. Do you have a copy
of the document that you provided to us? Do you have
it in front of you now?

A. (DR. SMITH) Yes.

Q. All right. You define an
epidemic investigation as a five step process. First
of all, you define the problem, secondly determining
if there is an epidemic and an epidemic curve. This
would have been the first study that you did as to
whether or not there was an increase in the number of
deaths, is that correct?

(ANSWERS BY DR. SMITH:)

A. Yes.

Q. And the third then is formulating
a hypothesis that is the cause of an epidemic;
number four, testing the hypothesis; number five, the



(ANSWERS BY DR. SMITH:)

conclusions to be drawn.

Did you in fact formulate the hypothesis, the statistical hypothesis before you did the testing for it?

A. I would like to add that this was a sketch that was prepared for Mr. Lamek to give him some general orientation to the report which we were going to review and when it was prepared I didn't intend it to be a formal submission so that there may be some refinements that we would want to put into there.

Q. Dr. Smith, before you looked at the data, did you formulate a statistical hypothesis?

(ANSWERS BY DR. BUEHLER:)

A. May I answer that. We performed a sequence of studies and I think it would be best if you could address that question for each study because it is too general, it is impossible to answer in the way you have asked it.

Q. Once you got beyond stage number 2, that is, determined that there was in fact a real increase in the number of deaths, did you then embark on a whole series of studies simultaneously?



(ANSWERS BY DR. BUEHLER:)

A. They proceeded in somewhat of a step-wise fashion, although some were ongoing simultaneously.

Q. Did you in fact document your hypothesis before you looked at the data?

A. Let's take each one a step at a time. The first issue we were attempting to address was ward conditions and features of the cardiac population after the mortality rate section. In that phase of the study we were looking for any characteristic of patient care that might have changed in coincidence or in parallel with the observed increase in mortality.

Q. That's essentially item 2 on the epidemic investigation, as has been characterized in the definition we have been given, isn't it?

A. I'm not sure I understand your question. We, very shortly after arriving there, established that there was an increase in mortality.

Q. Once you had done that, did you then set out the hypothesis that you intended to test statistically with the data that you had?

A. Okay, I think I would need to take that one step at a time. As far as the ward conditions and features of the cardiac population,



1

2

(ANSWERS BY DR. BUEHLER:)

3

the question that we asked was, was there a change
in any of these features or characteristics that
changed coincident or parallel with the increase in
deaths.

6

7

8

9

10

In terms of the ward population
study, the question that we were asking was, was
there a difference in the age, severity or illness
or prognosis among patients who were admitted to that
service.

11

12

13

14

15

16

17

18

19

In terms of the comparison of
epidemic-period deaths to deaths in other periods,
the question that we asked was, is there a difference
between children who died during this nine month
period compared to those who died at other times.
In terms of the death roommate study, the question
we asked was, at the time that a child suffered
terminal deterioration during the epidemic period,
how did that child differ from the other children who
were in the room at the same time.

20

21

22

23

24

25

In terms of the associations of death
with hospital personnel, the question we were asking
was, were there any patterns of association. Lastly,
in the brief Mortality for July through October,
1982, in effect the question that we dealt with was,



(ANSWERS BY DR. BUEHLER:)

was this pattern similar to that during what we had previously defined as the epidemic period and was there any unusual or rather any clustering of events with respect to place or time. Those were the questions that we were asking.

Q. And the question is, did you do this serially or did you do this simultaneously.

A. We were there at the hospital, the investigation was ongoing for a number of different months. We asked questions. Obviously collecting some of this information took weeks. For example, the death/death comparison study took a great deal of time to complete but while we were doing that we were engaged in other things as well. So that these things were ongoing in a general sense sequentially but with overlap.

Q. Okay. I would like to turn to the last topic that I want to ask you about and that is ward personnel, which begins on page 19 on table, I believe, 11.

First of all, just let me understand what you had available in order to come to any conclusions with respect to this material. Whatever conclusions you came to are only as good as the raw



1
2 (ANSWERS BY DR. BUEHLER:)

3 data that you started with, do you agree?

4 A. Yes.

5 Q. And I gather that you had some
6 difficulties determining the wares of the doctors
7 because of that and because that information wasn't
8 kept in a completely satisfactory way, not a reliable
9 way.

10 A. We looked most carefully at
11 doctors and nurses. The types of information that
12 were available for doctors and nurses were sub-
13 stantially different.

14 Q. Let's just talk about doctors
15 first.

16 A. Sure.

17 Q. I gather from reading the text
18 of your material that you had difficulty because there
19 was not a systematic way of recording who had changed
20 shifts with whom, is that correct?

21 A. With physicians.

22 Q. With physicians.

23 A. With physicians we used the
24 call schedules. Are you familiar with the call
25 schedules?

Q. We know all about the call



(ANSWERS BY DR. BUEHLER:)

schedules.

A. Okay.

Q. But was the problem that they were not necessarily reliable in that doctor one might have changed with doctor two and not be recorded on the call schedule?

A. Yes, that is a possibility. One of the features of the call schedule is that we are aware of the possibility of physicians making changes in the rotation of calls. Those changes would not necessarily be documented on the call schedules that we were using. In addition, the call schedules for physicians did not tell us as precisely as for nurses when an actual physician was on duty and not on duty; for example, when a physician was on duty the night before or exactly when did he or she go home from work.

Q. One of the things that we heard of from Dr. Costigan is that although not on duty, that is, not on the call roster he actually came to the hospital and was involved in certain incidents on Wards 4A and 4B. I mean, is that one of the things that you wouldn't have the information about?



1
2 (ANSWERS BY DR. BUEHLER:)

3 A. We wouldn't have that informa-
4 tion for any category of personnel.

5 Q. And with respect to the comings
6 and goings of doctors then your conclusions are that
7 you could make no associations with respect to
8 death and doctors, that is essentially what your
conclusions are, isn't it?

9 A. Well, that is in a sense our
10 conclusion, correct.

11 Q. Yes, but one of the reasons
12 that you can't do it, that you lack reliability on
which to draw a conclusion.

13 A. I think it is easiest to answer
14 that question by looking at the information that we
15 did have and then qualifying it.

16 Q. All right.

17 A. The information that we did
18 have on physicians revealed that in general for the
19 health staff or for the cardiology fellows or for
20 the staff attendants that they rotated on and off
21 the ward on intervals ranging from approximately a
22 month to six weeks. If you look at deaths during this
23 entire nine month period then in general you see that
24 physicians will be there for some deaths during one
25



(ANSWERS BY DR. BUEHLER:)

month and another set for another month and another set for another month, etc.

Using the available information that we had, we also looked at deaths where there was more specific concern, in particular the four deaths where there was digoxin prescribed -- I'm sorry, digoxin detected but never prescribed and using the available information that we had we didn't observe that any one physician was on duty for all four of those deaths. However, we were cautious and I think it is important to qualify that observation with the information that I provided already to you; in other words, that the comings and goings of doctors were not as precisely defined as with nurses and changes in the call schedules may not be well documented and a person may be in the hospital at a time when they are not officially on duty.

Q. We know that during this epidemic period that 31 of the 36 deaths involved resuscitation efforts. I believe that is roughly the conclusion. Five were 'do not resuscitate', so, subtracting 31 from 36.



1

24Jan84

BB

EMTrc 3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

(ANSWERS BY DR. BUEHLER)

And I believe that all of Category A deaths, your Category A deaths, there would have been resuscitation efforts. A resuscitation effort involves an arrest team coming onto the ward, to the patient, to try and provide medical care.

Did you look at the composition of the arrest team with respect to death? That is, did you try and make an association of death with the composition of the members of the particular arrest teams?

A. May I check something for just one moment?

Q. Yes.

A. If you look at page 22 of our questionnaire, Questionnaire No. 2, you will see --

THE COMMISSIONER: Sorry, that is 22 or oo?

MS. SYMES: Q. This is on the data sheets used in the preparation of the Atlanta Report?

A. Actually what is numbered page 36. You will see that we did include in our questionnaire information on members of the Code 25 team.



BB2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

However, it was not possible from the Hospital charts for the members of teams were not always clearly identified if you read the resuscitation notes, so that information was not usable really.

Q. My understanding is that although you attempted this you could not in any way get reliable data to draw any conclusions whatsoever; is that fair?

A. As far as members of the resuscitation team --

Q. Yes.

A. -- we pursued another way to get information on resuscitations using what turned out to be an incomplete log book of resuscitations, so again that was not helpful.

Q. And for example --

A. Let me -- there was a third part to that and, Dr. Wallace, do you want to address the issue of the call schedule? Okay.

You are quite correct, there was not as detailed information or very limited information on members of the resuscitation teams.

Q. So it was just not possible



BB3

1

2

(ANSWERS BY DR. BUEHLER)

3

to draw any conclusions yes or no with respect to
the association between members of the arrest team?

4

5

A. Members of the arrest team,
most of them would be resident physicians who were
rotating on and off.

6

7

8

Q. What presumably would be
anaesthetists --

9

10

11

12

13

14

A. Yes, a resident in anaesthesi-
ology, a resident in cardiology and others. The
only one of those I believe who was not a -- I
believe there was a nursing member in that team
who was not a resident physician, but you are
correct, there wasn't consistent information about
composition of resuscitation teams.

15

16

17

Q. But in 31 of 36 deaths the
presence of an arrest team is a consistent element
and association with those deaths?

18

19

20

A. That is correct, but the
issue in this investigation was what led to arrest,
not the handling of arrests themselves.

21

22

23

24

25

Q. But in terms of associations
which you were looking at any possible connection
between personnel and death, that is one that if you
had the data should have been explored?



BB4

1

2

(ANSWERS BY DR. BUEHLER)

3

4

A. Yes, if we -- it would have been desirable to have more information than we did.

5

6

A. (Dr. Wallace) Could I add to that? On page 20 --

7

8

Q. Page 20 of...?

9

10

A. (Dr. Wallace) Of our report, yes. The first paragraph we say:

11

12

13

14

15

"Call schedules were also reviewed for all other Hospital services." That means all other physicians who according to the Hospital records were supposed to be on duty that night. These we found to be inadequate as I think we have already explained. Members of the cardiac arrest team would have come from amongst these physicians.

16

17

THE COMMISSIONER: I'm sorry, what was that, Dr. Wallace?

18

19

DR. WALLACE: Members of the arrest team --

20

21

22

THE COMMISSIONER: Would what?

DR. WALLACE: -- during the night hours would have come from the physicians who were in Hospital overnight.

23

24

25

THE COMMISSIONER: Oh, yes.



BB5

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

MS. SYMES: Q. So no criticism of the fact that you couldn't draw a conclusion but it is simply you lacked the data from which to make any conclusions at all with respect to the association between members of the arrest team and death?

A. To the extent that the overall call schedule would reflect the composition of the arrest team, we had partial information. But you are correct, in general we would not have detailed information on the composition of the arrest team.

Q. So you are left then with a group of Hospital personnel who perhaps keep best records? That is nurses?

A. I wouldn't say we were left with that. We were interested in looking at physicians and we were interested in looking at nurses, and we looked as best we could at both.

Q. But with respect to the nurses I gather that you used -- your data came from the weekly schedule that was prepared for payroll; is that right?

A. (Dr. Smith) I don't know if that is what it was called. They were payroll



BB6

(ANSWERS BY DR. BUEHLER)

sheets.

Q. And they were done on a weekly basis?

A. (Dr. Smith) I can't remember if they were weekly -- arranged weekly or not.

Q. Which of you three supervised Miss Shilton in her task of gathering this information?

A. We were working as a team, and it might be helpful to step back for a moment and describe the circumstances that led to her participation with us.

We asked the Hospital -- we asked the Hospital for help with this part of the investigation; not only in terms of manpower but in terms of providing someone who would be in a position to be able to interpret those documents.

There were basically two types of documents that were used in constructing that schedule: one was a workbook and one was the individual sheets that were provided to us by the nursing authorities.

We asked Miss Shilton -- well, before doing that we stressed to the Hospital the



Smith, Buehler
Wallace, Kusiak
cr.ex. (Symes)

BB7

1

2

(ANSWERS BY DR. BUEHLER)

3

extreme importance that they provide someone that
we could trust, who they felt was a reliable person
to assist us, and they provided Miss Shilton to us.

5

6

Q. Let me confess my bias: Miss
Shilton is one of my clients.

7

8

A. I see. And we were very
pleased with the assistance that she gave.

9

10

11

Q. So the basic material then
that she had was this weekly schedule that is pre-
pared for the nursing office for payroll purposes?

12

13

14

A. It is a schedule -- our
understanding of the purpose of the schedule is
that it was used for documenting who was there and
for how long.

15

16

17

Q. And I gather that when it was
prepared it was prepared by the ward clerk. Is that
your information?

18

19

A. I don't know who prepared that
schedule.

20

21

22

23

24

25

Q. Would you agree with me
that certainly when it was prepared it was unlikely
that the preparer of it would have thought it would
have come to the significance that it came to in
Table 11. That is put in the degree of accuracy that



Smith, Buehler
Wallace, Kusiak
cr.ex. (Symes)

BB8

1

2

(ANSWERS BY DR. BUEHLER)

3

we are now required to rely on with respect to
4 making the conclusions for Table 11?

4

5

A. Let me take that one step at
a time if I may.

6

7

I am quite confident that whoever
was filling out those forms never suspected that
8 they would be used in an investigation of this sort.
9 I don't think that is an unreasonable assumption.

9

10

11

12

13

14

15

16

17

18

I think that our interpretation of
those forms again has to be used with the same
concerns that we used in interpreting the physician
forms; i.e., if a schedule said a person went off
at 7:30, they could have gone off at 7:31 or 7:32
or some time plus or minus that. So I think even
though the information was much more precise in
terms of when people went on and off duty for nurses
as compared with physicians, we should not take that
as an absolute.

19

20

21

22

Q. Not only that, but because
they were prepared for an entirely different
purpose, there would be no perceived need to be as
accurate as to whether or not someone was there on
Tuesday or on Wednesday, just for an example?

23

24

25

A. Well, I don't -- I think that



BB9

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

the people who are on that form would have some interest in having it be accurate because it might reflect how much they get paid.

Q. But whether you are there Tuesday or Wednesday for the same amount of hours doesn't make any difference?

A. That is correct. But let me just add one thing to ~~that~~: In preparing the nursing calendar Miss Shilton used the workbooks and cross-checked them against that schedule. To the extent that the workbooks were available.

Q. I was just going to come to that.

A. Yes.

Q. Because I understand that she in order to try to be reliable tried to have a second check, and that was what was called the assignment books?

A. Correct.

Q. But I gather there was a problem and that is that the assignment books for 4B were not available to you nor to Miss Shilton specifically for 4B up to January of 1981?

A. Let me check with the report



BB10

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

because I believe we state that in the report. I believe that is correct.

Yes, on page 18 of the report under the death roommate study we state:

"These workbooks are discarded periodically and were not available for Ward 4B prior to January 1981."

So for Ward 4B from July 1980 through December 1980, those workbooks were not available.

Q. So six of the nine months then for which there was no separate check?

A. That is correct.

THE COMMISSIONER: Workbooks and assignment books are the same thing? In one place here, and I think it is on page 20, it says "nursing assignment workbooks". It is all the same thing?

MS. SYMES: I think they are referred to as assignment books.

Q. In addition, were you also aware that there might be some problem in the absolute-- as to the accuracy of the assignment books, whereas they were to be changed if something changed during



BB11

1

2

(ANSWERS BY DR. BUEHLER)

3

the shift or before - that is someone became ill

4

or someone was sent on relief. They were not always

5

kept to perfection standards?

6

A. That doesn't -- I'm sorry,

7

you are asking me if I was aware that -- as I under-

8

stand the question you are asking me, is it

9

possible that 100 per cent of the changes that

10

were made at the last minute or during a shift might

not be recorded in the book?

11

Q. Yes.

12

A. Certainly I think that is

13

possible.

14

Q. And I gather that there was

15

also relief staff in two ways: first of all that

16

nurses who had been assigned to either 4A or 4B to

17

give patient care might be sent away. That could

well occur on an evening.

18

A. (Dr. Smith) Out of 4A and 4B?

19

Q. Yes.

20

A. (Dr. Smith) To a different

floor or ward altogether?

21

Q. Yes.

22

A. (Dr. Smith) Yes, that could

23

occur.

24

25



BB12

1

2

(ANSWERS BY DR. SMITH)

3

4

5

6

7

8

9

10

11

12

Q. And I gather that occurred at the time of going on duty? In other words that Nurse 000 might be assigned to 4A but when she reports is actually sent on to the ICU or something like that?

13

14

15

16

17

18

19

20

A. I do not remember that being a consistent pattern. Sometimes in the middle of a shift a person might get reassigned and we did not document the number of times that a particular type of change occurred over that period.

21

22

23

Q. All I am trying to establish is that whereas documentation might show that Nurse 000 was on 4A or was supposed to be on 4A let's say from the night, the long night shift, the reality may be that she was transferred elsewhere and that the documentation not reflect it either at the beginning of the shift or partway through?

24

25

A. (Dr. Buehler) That is certainly possible.

Q. And I also gather that there were relief nurses who if 4A and 4B had illness or a particularly heavy patient load might get assigned into 4A/4B?

A. That is correct. And that is



ANGUS, STONEHOUSE & CO. LTD.
TORONTO, ONTARIO

Smith, Buehler
Wallace, Kusiak
cr.ex. (Symes)

552

BB13

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. SMITH)

how the total number of nurses came to be over 200
when in fact the core number of nurses on those
wards is much smaller.



Smith, Buehler,
Wallace, Kusiak,
cr.ex. (Symes)

CC/DM/ak

(ANSWERS BY DR. BUEHLER)

Q. But I gather that you had difficulty in verifying the accuracy of the relief nurse records?

A. Getting back to the original question you asked, that calendar was as good as the information that went into it and certainly it is possible that the information was not 100 per cent complete.

Q. But that is the last thing I have just raised, that is the relief nurses, that is a possibility?

A. Yes.

Q. That there might have been errors?

A. Yes.

Q. Now I gather that the exercise with respect to who was to be correlated or associated was only those nurses who were giving patient care, that is team leader and those nurses specifically assigned to the ward, to the patients?

A. Our intent was to determine which nurses were on duty on 4A and 4B.

Q. But in practice my understanding is that you only did those people, a team leader or



CC2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

below the rank of team leader?

A. I am sorry --

THE COMMISSIONER: That includes everybody, doesn't it?

MS. SYMES: No, Mr. Commissioner, it doesn't. I wouldn't include for example the IV team; it would not include nursing supervisors, nursing teachers.

THE COMMISSIONER: Okay, I see your point.

MS. SYMES: Patient co-ordinators, all of these kinds --

THE COMMISSIONER: Oh, you are talking about the people above, those are not included?

MS. SYMES: Mr. Commissioner, it is not necessarily above in a hierarchy, it may be beyond but not necessarily above.

DR. BUEHLER: I see the question you are asking now. We understand that many of the ancillary or co-personnel were not routinely in the Hospital after approximately 10:00 or 11 o'clock at night except for a hospital-wide nursing supervisor.



1
2
(ANSWERS BY DR. BUEHLER)

3 MS.SYMES: Q. An IV team.

4 A. Our understanding, we were
5 told that the IV teams were not in the Hospital
6 24 hours.

7 Q. Did you determine when they
8 left? You only worked on long days and long nights,
9 that is 12-hour shifts in your analysis?

10 A. That is correct. We looked
11 at the personnel that were assigned to Wards 4A and
12 4B on those shifts.

13 THE COMMISSIONER: I am sorry, was
14 there another type of shift on 4A/4B?

15 MS. SYMES: Mr. Commissioner, I
16 believe if there hasn't been evidence yet other
17 people in the Hospital worked other than 12-hour
18 schedules.

19 THE COMMISSIONER: On 4A and 4B?

20 MS. SYMES: Yes, sir, there were
21 people who worked, who were associated with the
22 work who worked other than 12-hour schedules, they
23 worked 8-hour schedules.

24 DR. BUEHLER: Our understanding is
25 there were some nurses who worked less than a 12-hour
schedule if they were on duty on 4A or 4B. We have



CC4

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

in our nursing calendar for example a number of
nurses who were there for less than 12 hours on
some days, that type of information is in the
calendar.

MS. SYMES: Q. I understand that.
My question is that your study of association did
not even consider those people who would have been
present in the Hospital, could have been present
in the Hospital, but were not the team leader or
the nurses providing direct patient care?

A. On a 24-hour basis?

Q. At any time, might have been
providing that nursing care any time during the
24 hours?

A. There was clearly a wide
variety of people who were routinely there during
the day and from evening to the early night, we
did not look at them. As we stated we focused
primarily on those peronnel who were present 24
hours a day in patient care areas.

Q. So for example you didn't
look at nursing supervisors?

A. No, we did not look at nursing
supervisors. We were looking at persons who were



Smith, Buehler,
Wallace, Kusiak,
cr.ex. (Symes)

CC5

1

2

(ANSWERS BY DR. BUEHLER)

3

on duty on the wards.

4

5

6

Q. So you looked at then not all
the staff on 4A/4B, all the nursing staff, but only
a subset of them?

7

8

9

A. To the extent that IV nurses
are part of that, yes, you are correct, IV and
other types of nurses.

10

11

Q. Like the teaching team leaders
were not included?

12

13

A. No.

14

15

Q. The patient co-ordinators
were not included?

A. No. Our understanding is -
excuse me.

16

17

18

19

20

21

THE COMMISSIONER: I am just a
little confused, you said you had looked at people
on, I thought I heard you say 24 hours a day and I
don't imagine there are many people would stick
that for long. I take it you concentrated on the
people who were there on the night shift, is that
right?

22

23

24

25

DR. BUEHLER: We looked in detail
at both shifts. We constructed a calendar which
by one-half hour intervals looked at that entire



CC6

1

2

(ANSWERS BY DR. BUEHLER)

3

nine-month period, days and nights.

4

THE COMMISSIONER: Yes, but for

5

the vital determination of course when the onset

6

came on during the night we are concerned with who

7

was on at that time, isn't that right?

8

DR. BUEHLER: That is correct.

9

THE COMMISSIONER: Did you concern

10

yourself - maybe I haven't understood Miss Symes,

11

did you concern yourself with whether a supervisor

12

or any other person was on during that time? You
may not have looked at everything that a supervisor

13

did, but did you concern yourself with whether the

14

supervisor was or was not on duty at the time of the

15

death of any of the children?

16

DR. BUEHLER: No.

17

THE COMMISSIONER: May I ask why

18

you didn't do that, why you didn't concern yourself,

19

was it because the supervisors were never on duty at

20

night, but certainly some of these deaths took place
in the daytime?

21

DR. BUEHLER: Yes. We focused on

22

those personnel who were routinely on the wards for

23

long periods of time around the clock, that would

24

be physicians and nurses.

25



CC7

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

THE COMMISSIONER: That supervisors
I take it are not routinely on the wards?

DR. BUEHLER: They cover many
wards.

THE COMMISSIONER: I have now
forgotten the precise evidence, but surely there
are some supervisors who are on duty at night, are
there not somewhere in the Hospital, not necessarily
on the wards, but there are some supervising nurses
that are on duty at night?

DR. BUEHLER: Yes.

THE COMMISSIONER: Would it not
concern you if a supervising nurse was, or by
coincidence happen to be on duty at the time of
all of these deaths?

DR. BUEHLER: Yes, that would be
a concern.

THE COMMISSIONER: Well, how would
you know whether she was or she wasn't?

DR. BUEHLER: We did not address
the issue of the supervising nurses.

THE COMMISSIONER: Well maybe you
shouldn't have. I really want to know why you didn't
do that, why are you not concerned? I will concede
that it is more likely the concern would be with the



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

nurses who were there at the time. Why would you not be concerned about some supervisor also being there?

DR. BUEHLER: Well, we chose to focus on those Hospital personnel who were on the wards for long periods as a matter of course. I think part of this discussion is drawing attention to the key difference between an epidemiological study of this type of process and a criminal study.

MS. SYMES: Q. Well, not strictly, Dr. Buehler, because all you are doing is drawing associations.

(ANSWERS BY DR. BUEHLER)

A. That is correct.

Q. That is all you are doing?

A. That is absolutely correct.

Q. And you are trying to determine, all you are trying to determine in Table 11 is who had access, that's all.

A. Access is - I believe that may be a legal term and certainly we were interested in persons who were on duty to see if there were both potential associations. Whether or not you would say access in terms of an intentional act or an accidental act, or another type of error, that is certainly a possibility.



CC9

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

Q. Your words were necessary
but not sufficient.

A. I am sorry?

Q. Your words, mine was access,
your words were necessary but not sufficient, we
are talking about the same thing.

A. I'm sorry, would you state
your question again and I will try to phrase it
in a better way.

Q. We are simply talking about
Table 11, nothing more than association.

A. That is correct.

Q. And your words are necessary
but not sufficient.

THE COMMISSIONER: What are
necessary?

DR. BUEHLER: Are you saying I
used the word necessary and sufficient?

MS. SYMES: Q. I believe you said,
your conclusion is that the presence would be
necessary but it is not sufficient to explain the
cause of death.

A. Would you direct me to the
page you are looking at?



CC10

(ANSWERS BY DR. BUEHLER)

Q. At page 27, for example, the last full paragraph you say:

"Information defining the duty times and locations of nurses was much more precise than that for other kinds of hospital employees, particularly physicians..."

THE COMMISSIONER: I'm sorry, I am lost, where is this?

MS.SYMES: Page 27.

THE COMMISSIONER: Yes.

MS. SYMES: The second full paragraph, essentially the last sentence.

THE COMMISSIONER: All right, thank you: "Information defining..." is that it?

MS. SYMES: "Information..."

THE COMMISSIONER: Yes.

MS. SYMES: Q. "Information defining the duty times and locations of nurses was much more precise than that for other kinds of other hospital employees, particularly physicians, and the observed association between Nurse 401 and the epidemic period



1
2
3 (ANSWERS BY DR. BUEHLER)

4 "deaths does not establish that she
5 had exclusive access to these patients."
6 And I believe it was this morning and
7 yesterday that the phrase came that it would be
8 necessary but not sufficient that she be there.

9 THE COMMISSIONER: It would be
10 necessary, oh, I see, that is the same thing.

11 MS.SYMES: It is the same thing.

12 MR. HUNT: That is Dr. Haynes'
13 evidence at page 21.

14 THE COMMISSIONER: I now understand.

15 MR. HUNT: The third full paragraph.

16 THE COMMISSIONER: If she were to
17 have administered the dose she would have had to be
18 there, but the fact that she was there didn't prove
19 that she did it.

20 DR. BUEHLER: Are you referring to
21 Dr. Haynes' report?

22 MS. SYMES: Q. I just want to
23 use your conclusion that you drew on page 27.

24 THE COMMISSIONER: These were not
25 the words he used and that is why I got him confused,
but those are the words you did use, those are the
ones you should justify and not some other ones



C12

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

that somebody else has used.

Yes. All right. Now, some time ago there was a question.

MS. SYMES: Q. All that Table 11 does then is establish the presence or association of personnel to death?

A. That is correct.

Q. That is all?

A. That is correct.

Q. And you took a limited number of people, that is what you looked for.

A. We looked at the nurses who were routinely on duty, or not routinely on duty on that ward, on duty for purposes of patient care.

Q. From team leader and below?

A. Correct.

Q. And because of lack of data with respect to, for example, the arrest team, or the physicians on the ward, nothing can be said about those?

A. We can say something about the physicians on call but with much less certainty.

Q. Now, Table 11, I would like to see if I understand what all these magic numbers mean.



CC13

1

2

(ANSWERS BY DR. BUEHLER)

3

The relative risk which is what, if you for example

4

take at page 44, let's take Category A, the

5

relative risk is defined as I understand it the

6

risk of a child dying when a particular nurse is

7

on duty divided the risk of the child dying when

8

the nurse is off duty, it is that ratio essentially.

9

A. The one rate over the other.

10

Q. And if deaths are random you
would predict that ratio is one?

11

A. If there were no associations,

12

correct.

13

Q. Yes.

14

A. Correct.

15

Q. So if death were random the
association should be one.

16

A. If there were no associations

17

between persons, yes.

18

THE COMMISSIONER: I'm sorry, that

19

would be only if - well, I don't know, I'm not

20

a statistician, but surely the nurse would have

21

to be on duty an equal amount of time to being-

22

off, wouldn't she, no, that doesn't follow?

23

DR. SMITH: No.

24

THE COMMISSIONER: Oh, I see, all

25



CC14

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

right, that is taken into consideration somewhere.

MS. SYMES: Q. Dr. Buehler,
is taken into consideration by the fact that the
number of deaths that she is on for compared to
the number that she is on for should be matched out
with the number of deaths which she is not there
compared to the number of hours she is not there?

THE COMMISSIONER: I now understand.

MS. SYMES: Q. And that number
should be one if there is no association?

(ANSWERS BY DR. BUEHLER)

A. A relative risk of one means
there is no association.



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

DD
1/PS

Q. And that would indicate a random pattern?

(ANSWERS BY MR. KUSIAK:)

A. Yes, if the death rate while the nurse is on duty is the same as the death rate when the nurse is off duty, the relative risk should be one, or vary about one.

Q. Now, on page 44 you give confidence intervals, 95% confidence intervals with respect to the relative risk.

A. (DR. BUEHLER) That is correct.

Q. Let me just say that what that means, as I understand it, is that you can say with 95% assurance that the relative risk for that nurse lies between the bottom limit and the top limit.

(ANSWERS BY MR. KUSIAK:)

A. That is the interpretation of that.

Q. Obviously, if the answer is one for random, that should be included in the confidence limits.

A. Yes.

(ANSWERS BY DR. BUEHLER:)

A. If the confidence limits



1

2

(ANSWERS BY DR. BUEHLER:)

3

include the value of one, then you could not be...

4

Q. Yes, I think I have asked the
question in a clumsy way.

5

6

A. Yes.

7

Q. If there is no association
between a nurse and death, then one should be in-
cluded in the confidence limits.

8

9

A. Yes.

10

THE COMMISSIONER: I don't understand
the question.

11

12

MS. SYMES: It is important.

13

THE COMMISSIONER: Yes, all right.

14

MS. SYMES: I think it is important.

15

THE COMMISSIONER: Yes, all right.

16

MS. SYMES: If the deaths are random,
that is, there is no association the answer should
be one.

17

18

THE COMMISSIONER: The answer is one.
I got that far, yes.

19

20

MS. SYMES: If there is no association
then one should be included in the confidence interval,
right?

21

22

DR. BUEHLER: Well, let me answer it
in a slightly different way.

23

24

25



Smith, Buehler,
Wallace, Kusiak
cr. ex. (Symes)

(ANSWERS BY DR. BUEHLER:)

MS. SYMES: Q. Could I just ask a question. In other words, the lower confidence limits should be less than one and the higher confidence limits should be greater than one.

THE COMMISSIONER: That's right, I understand that. But the way you phrase it one should be included. You mean one should be bracketed?

MS. SYMES: Yes, one should be bracketed.

DR. BUEHLER: If the 95% confidence level includes one, then you cannot say that with 95% confidence that there is an association.

Q. If you look down the confidence limits on page 44.

A. Yes.

Q. You see down and including 703 that the confidence intervals on nights do not include one for all of those.

A. I'm sorry, the question again is for the night shift?

Q. For the night shift. For the nurses from the top to down to and including 703 do not include one.

THE COMMISSIONER: That's because of



1
2 (ANSWERS BY DR. BUEHLER:)

3 the cluster of deaths, isn't it?

4 MS. SYMES: No, it can't be, Mr.
5 Commissioner. If they are random and if there is
6 no association ---

7 THE COMMISSIONER: Well, I know. Well,
8 all right, I had better let them answer it but I
9 would have thought that is the answer.

10 MS. SYMES: It can't be.

11 THE COMMISSIONER: All right.

12 DR. BUEHLER: If you go down the list,
13 that is correct, 703 for the night shift, the confi-
14 dence limits are 1.4 to 7.0, whereas, for 701 it is
15 0.6 to 4.7, etc.

16 Q. All that that says then is
17 that for all of those people there is some association.

18 A. That is correct.

19 Q. And in other words really all
20 this table says is that there is a whole bunch of
21 people who are associated, that is, have a probability
22 of presence.

23 A. That is correct. The value of
24 the relative risk, however, is an indicator of the
25 degree of association.

Q. You told us before I believe that



1
2 (ANSWERS BY DR. BUEHLER:)

3 anything that was two or less you just discarded
4 as not meaningful.

5 A. I believe you are referring to
6 Dr. Haynes' report.

7 Q. I believe it was Mr. Kusiak
8 who agreed with me, is that correct?

9 A. (MR. KUSIAK) I think Dr. Haynes'
10 statement was that as far as relative risks of two
11 are concerned, relative risks of 10 are considered
12 relatively strong, words to that effect.

13 Q. Relative risks of 5 are
14 considered moderately strong.

15 A. Words to that effect, given
16 that there is a sufficient number of data to deal
17 with.

18 Q. So, when we look at the
19 table for, table 11 for category A deaths, all we
20 see on it is that there are a number of people as-
21 sociated with different degrees of relative risk.

22 (ANSWERS BY DR. BUEHLER:)

23 A. That is correct.

24 Q. And that there is a good number
25 of them that have relative risks greater than two.

A. I think one of the things that



(ANSWERS BY DR. BUEHLER:)

you have to take into consideration in looking at this table is the structure of the nursing teams and that certain individuals tended to work in groups. So, I think that may be reflecting that.

Q. But before we jump to any absolute conclusions with respect to the meaning of table 11.

A. Yes.

Q. All it shows is an association and that there were a number of people that you studied that were associated.

A. It shows that, but that's not all it shows. It shows that there are people who have different degrees of relative risk.

Q. And you say then that if it is random it should be one, the relative risk should be one.

A. If there is no association relative risk should be one, correct.

MS. SYMES: Those are my questions.

THE COMMISSIONER: Yes, thank you, Ms. Symes. Mr. Knazan?



CROSS-EXAMINATION BY MR. KNAZAN:

Q. Doctors and Mr. Kusiak, my name is Knazan and I represent Nurse 404, Christie.

THE COMMISSIONER: I think you might give her a name.

MR. KNAZAN: Christie; I said Christie, Mr. Commissioner.

THE COMMISSIONER: Oh, I see.

MR. KNAZAN: Q. I think the only time she is mentioned in the report is page 21. About eight lines down you make a statement about Nurse 402 and you give the relative risk -- this is for all deaths -- Nurse 403 you give the relative risk and Nurse 404 5.6 and then you make a statement which I believe in table 11 is false. The other six nurses have a lower relative risk estimate and were members of nursing teams that were finally on duty on Ward 4B, while Nurse 401's team was on duty on Ward 4A.

Let me turn to the third page of table 11 and you refer to Nurse 704. You will agree with me that all three of her relative risk readings, day, night and total are greater than Nurse 404's, is that correct?

A. (DR. SMITH) Yes.



(ANSWERS BY DR. BUEHLER:)

A. Let me check this now. We need to check and make sure which table we are dealing with here.

Q. I may be wrong.

THE COMMISSIONER: Well, if you look at category A deaths I think you are right.

MR. KNAZAN: Well, it is not true there either because there 706 is higher than 404.

THE COMMISSIONER: Well, the category doesn't matter but I can see what your point is. Certainly for the total number of deaths that is so and for category B deaths but it doesn't seem to be for category A deaths.

DR. BUEHLER: I would direct your attention to the first page of table 1.

MR. KNAZAN: Q. Yes.

A. Is that what you were referring to?

Q. No. I picked a table from your figures on page 21.

A. Okay.

Q. The 8.2, the 7.9, the 5.6 for 402 and the 33.3 as well for 401 can only come from page 46 of our bound volume or page 3 of your table 11.



Smith, Buehler,
Wallace, Kusiak
cr. ex. (Knazan)

1

2

(ANSWERS BY DR. BUEHLER:)

3

Those are the total figures for table 11. Your
page 21 corresponds to your table 11, all deaths.

4

5

THE COMMISSIONER: Yes, I see what
you mean. The figures on page 21 refer to the total
number of deaths.

6

7

MR. KNAZAN: Yes.

8

9

THE COMMISSIONER: And it isn't
accurate.

10

11

MR. KNAZAN: Well, just the next
statement the other six have lower relative risk
levels.

12

13

THE COMMISSIONER: Yes. But that
doesn't apply to 704, is that what you are saying?

14

15

DR. BUEHLER: I see. Yes, that
appears to be correct.

16

17

18

19

MR. KNAZAN: Q. Now, just over the
page to table 12. I want to go into this in some
detail but just for the time being for 02040 you give
the time estimate of 30 to 90 minutes.

20

21

A. That's the estimate that Dr.
Kauffman gave us.

22

23

24

25

Q. I believe it is not, we have
Dr. Kauffman's report to you but if you look at your
own appendix 2 for Baby 02040 the time is 30 to 60



(ANSWERS BY DR. BUEHLER:)

minutes.

A. I'm sorry, which page?

Q. They are not numbered, it is
your appendix category A deaths.

THE COMMISSIONER: Yes, it is page 60,
I think.

MR. KNAZAN: Page 64.

THE COMMISSIONER: 64?

MR. KNAZAN: Of our bound volume.

THE COMMISSIONER: 02040?

MR. KNAZAN: Yes.

DR. SMITH: Those are the case sum-
maries?

MR. KNAZAN: Yes.

THE COMMISSIONER: Which child is
that?

MR. KNAZAN: This is Lombardo and it
is 30 to 60 minutes. I have checked that with our
Exhibit 272 and that's the number Dr. Kauffman gave
you.

A. (DR. SMITH) That's correct.

A. (DR. BUEHLER) I believe that
Table 12 would not be changed.

Q. No, I agree.



1
2 (ANSWERS BY DR. BUEHLER:)

3 A. If it were 30 to 90 or 30 to
4 60 minutes.

5 Q. I just raise these two points
6 for a preliminary question and I put this with all
7 respect because I don't particularly find your report
8 is adverse to my client's interests.

9 You didn't date the reporting letter,
10 you didn't acknowledge Dr. Phillips' pathology as be-
11 ing involved in the interviews, you made the error
12 which Dr. Haynes pointed out was rather fundamental
13 to the sampling techniques, you made two transposing
14 errors that I have just pointed out to you.
15 Was there something going on between September of '82
16 when you were retained and February of '83 which caused
17 you to work under some pressure or were circumstances
18 less than ideal for getting out this report?

19 A. I would say that we were working
20 under -- well, we did not have unlimited time to
21 complete this report, you are correct.

22 Q. Now, back to Table 12 for a
23 more substantial question. Exactly what does that
24 purport to show? You say:

25 "Associations with Nurses, Four
Patients with an Estimate of Time of



Smith, Buehler,
Wallace, Kusiak
cr. ex. (Knazan)

(ANSWERS BY DR. BUEHLER:)

Digoxin Overdose Administration."

I can find nowhere in the table or in the text of the report which suggests what you mean by these four patients. Are these the only four patients that have an estimate of time or did you pick these four patients because they were less than two hours or was there any other reason that you didn't include the other patients which Dr. Kauffman gave an estimate of time?

A. There were four patients, these were the four patients for whom he was able to make a more precise estimate of time. There were two other patients for whom he made an estimate of time. One of them, the time estimate he gave was approximately five hours based on assuming the child received an overdose after transferring to the ward, that event occurred approximately five hours after the transfer. For the other child he made a longer estimate, approximately 19 to 21 hours, based on the duration of hospitalization. But these are the four for which he was able to make a more specific estimate.

Q. The ones you mentioned, by the way, are Belanger and Pacsai, the five hours under 21 hours. He also made an estimate for Warner but



1

2

(ANSWERS BY DR. BUEHLER:)

3

you only included category A deaths. Is that what

4

this table means? You did not consider that precise
enough?

5

A. I'm sorry?

6

Q. You said there were only two

7

others besides these four.

8

A. Among category A deaths.

9

Q. No, two others are 4A deaths

10

besides these and since they were 5 and 21 hours you

11

did not consider them to be precise enough to warrant
inclusion in the statement.

12

A. Yes, this table was only for

13

those four where he felt he could made a more precise

14

estimate. That is based on Dr. Kauffman's assess-

15

ments.

16

Q. Well, is that your definition of

17

precise or his?

18

A. His.

19

Q. Well---

20

A. Well, let me take that back.

21

Let me say that for these four he was able to use the

22

pharmacologic data as far as we understand what he

23

did to estimate a time. For the other two where he

24

made the estimates of five and 19 and 19 or 21 hours,

25

25



1
2 (ANSWERS BY DR. BUEHLER:)

3 those were based on other events; in other words,
4 time of transfer or time of admission.

5 Q. But you in preparing this
6 report obviously felt this table was important in
7 addition to Table 11.

8 A. Yes, and Dr. Kauffman reviewed our
9 report and concurred.

10 Q. And there was one other subgroup
11 which you felt was important because you wrote about
12 it on page 21 and that is which nurses were associated
13 with deaths of children where there was some evidence
14 of having had digoxin when they weren't prescribed it.

15 A. Yes, that is correct.
16
17
18
19
20
21
22
23
24
25



24jan84 2
EE
EMTrc 3

(ANSWERS BY DR. BUEHLER)

Q. That is page 21.

Could we just clarify that because the way in which you set it out it is not clear where Nurse 404 would be in that table of the four deaths of those children.

From Table 12 you say:

"Nurse 402 was on duty for three; Nurse 403 for one; Nurse 404 for three, and for the other two infants where digoxin was present post mortem but not prescribed Nurses 401 and 403 were on duty at and within four hours prior to the reference time for both. Nurses 402 and 404 for one."

But you never say how many of the four Nurse 404 was on.

A. Let me check because I think that information would be available by combining --

Q. Yes, but I put it to you it is 2.

A. Okay. I'll take your word for it.

THE COMMISSIONER: Sorry. I'm lost.



Smith, Buehler
Wallace, Kusiak
cr.ex. (Knazan)

EE2

1

2

(ANSWERS BY DR. BUEHLER)

3

The four infants that digoxin was present and not
prescribed, Nurse 404 was present for three. That
is Table 12; is that right?

4

5

MR. KNAZAN: Yes.

6

7

THE COMMISSIONER: For the other
two infants where digoxin was present --

8

9

MR. KNAZAN: I'm sorry, no, Table 12
is the --

10

11

MR. LAMEK: The children in Table 12
are not those for whom digoxin was not prescribed.

12

13

THE COMMISSIONER: No, no, you are
quite right.

14

15

MR. LAMEK: Two of them --

16

17

THE COMMISSIONER: Yes, that is
right, so we have got a duplication.

18

19

MR. KNAZAN: That is right.

20

21

THE COMMISSIONER: All right. And
what is the answer, 404 was present for how many?

22

23

MR. KNAZAN: Two of the four.

24

25

THE COMMISSIONER: Two of the four.

DR. BUEHLER: That is correct. I
have checked the calculation.

MR. KNAZAN: That leads me to my
next topic, Mr. Commissioner. I will be about



EE3

1

2

(ANSWERS BY DR. BUEHLER)

3

twenty minutes.

4

THE COMMISSIONER: All right. We
will take fifteen minutes now.

5

--- recess.

6

--- on resuming.

7

THE COMMISSIONER: Yes, Mr. Knazan.

8

MR. KNAZAN: Yes. Thank you,

9

Mr. Commissioner.

10

Q. Just before we broke, Dr.

11

Buehler, I think you answered my next question before
it was asked because you confirmed that my client
404 was on for two of the four deaths wherein
digoxin was found but not prescribed.

12

13

14

15

16

17

18

19

20

I was going to ask you about a
comment you made yesterday when you told Mr. Lamek
that someone might ask what about a death that
occurred five minutes after the nurse came on,
and then you said that question would not be
relevant because of the time frame that we are
looking at.

21

A. In general.

22

23

24

25

Q. In general, but if you look
at Baby 041, Belanger, you see that the onset of
critical events was 1930, and I think you confirmed --



Smith, Buehler
Wallace, Kusiak
cr.ex. (Knazan)

EE4

1

2

(ANSWERS BY DR. BUEHLER)

3

4

5

could I confirm that if 404 came on her shift at
1930 for the long night that night she would have
been listed as off duty for that death?

6

7

A. (Mr. Kusiak) I think I
would have to go back to the computer program. It
has been quite a while.

8

9

10

Q. Well, do you recall con-
fronting that problem, because that is the case in
which it arises squarely?

11

12

13

A. (Mr. Kusiak) I couldn't
deal with specific things. All I can deal with--
(inaudible).

14

--- Reporter appeals.

15

16

17

18

19

20

A. Let me check something.
THE COMMISSIONER: We don't do things
the way things are usually done in a civilized
society. We record everything you say and the
reporter has some trouble if you don't turn this
way. If you can think of it, do it and if not,
Madam Reporter, you just raise your hand and create
a row.

21

22

23

24

25

Yes, all right, Mr. Knazan. The
problem is whether your client came on duty at what
time on what day, please?



EE5

1

2

(ANSWERS BY DR. BUEHLER)

3

4

MR. KNAZAN: Belanger, December 28,
1980, the long night shift started at 7:30 p.m.

5

6

THE COMMISSIONER: And the time of
onset?

7

8

MR. KNAZAN: 7:30 p.m. and death at
8:10.

9

10

11

12

13

Q. Now I am just trying to
understand how you account --

THE COMMISSIONER: Help me out.
Now you have examined all these figures. Belanger
is one of the two that your client is alleged to
have been present, at least associated with?

14

15

16

17

18

19

MR. KNAZAN: I think not because she
was on Hines and Cook.

THE COMMISSIONER: Oh, I see.

MR. KNAZAN: So I am just trying to --

THE COMMISSIONER: All you can do,
you can make it three then instead of two, so I
wouldn't pursue that.

20

21

22

MR. KNAZAN: Well, I wonder whether
I should pursue this line but I am trying to
establish here what the witnesses meant by "on",
because it is fundamental to --

23

24

25

THE COMMISSIONER: All right.



EE6

(ANSWERS BY DR. BUEHLER)

MR. KNAZAN: -- Tables 11 and 12.

A. In that individual instance we would need to go back to the nursing log.

Q. Well I have attempted to count the Category A clients -- babies, excuse me -- for which my client was on, and I seem to get 11 counting her off for 041. So I will assume that you considered her off duty, but is it also true that she would be considered off for those nights when she was on another ward in the Hospital?

A. I'm sorry?

Q. At page 20 where you sort of set out the basis for these tables, the last full paragraph, you say:

"There were 46 nurses who were on duty at the time of onset..."

Now should "on duty" be read "on duty on Wards 4A/4B" or "on duty in the Hospital"?

A. On duty on Wards 4A/4B.

Q. So that if she were on 7 or 5 she would be considered off duty?

A. That is correct, if that were accurately entered on the logs.

Q. Yes.



EE7

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

A. As a matter of course we looked at duty schedules for Wards 4A/4B.

Q. Following on from Ms. Symes, would that not be another weak point in the calculation of association of personnel if what you are interested in is opportunity of access to the child?

A. We didn't look at every nurse on duty in every ward. We only looked at nurses on duty on Wards 4A/4B. That is how that was done.

Q. I understand you wouldn't look at every nurse on duty on every ward in the Hospital.

A. Yes.

Q. Mr. Lamek asked you yesterday if one of the reasons you looked at physicians and nurses wasn't because they would arouse - I am paraphrasing him - less suspicion being in contact with the children, and you remember you said yes? Do you remember that?

A. That was a general issue of plausibility that was raised and that was something we discussed in the summary.



EE8

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

Q. So there would be a slight difference between the case I am putting to you and your answer. That is if a regular 4A or 4B nurse was on duty one night on 5 or 7 and had been down to the ward that might be of some interest to you in making this association?

A. That type of information was not used.

Q. Now Ms. Symes was asking you about Categories A, B and C and yesterday you testified I think, Dr. Smith, that you sought outside consultants because you quickly realized you lacked the competence to make the assessments which were necessary for the study. Is that right?

A. (Dr. Smith) Some of the assessments, yes.

A. You mean the expert assessment --

Q. Yes.

A. -- we needed help with.

Q. After you got back the expert assessments, it was you who decided how many factors you would take from each of them in determining your categories?



EE9

1

2

(ANSWERS BY DR. BUEHLER)

3

A. That is correct.

4

Q. Would that not be a decision which would also require clinical or medical competence of the type that you thought you didn't have?

7

8

A. The report was reviewed by the consultants and approved by them.

9

10

Q. Was it approved with respect to the selection of category?

11

12

13

14

A. Prior to submitting the report we sent a draft of the original to each of the three consultants. They read it and they sent it to us. Undoubtedly they focused on those parts of the report that dealt with their input.

15

16

17

18

Q. We have evidence at this Commission from Dr. Fay who was a consulting pediatric cardiologist to the Commission, and this is found at page 69 --

19

20

THE COMMISSIONER: What Commission did you have in mind there?

21

22

MR. KNAZAN: Sorry, I thought he had been retained by the Commission - the Police. Sorry, Mr. Lamek.

23

24

25

MR. LAMEK: We would have been proud



EE10

(ANSWERS BY DR. BUEHLER)

to have him.

THE COMMISSIONER: You had better not let that out or he will be sending a bill.

MR. KNAZAN: Q. Volume 69, page 5238, that is from a consulting pediatric cardiologist's point of view the best opinion would be one that came from a combination of both mode of death and clinical status. And that was after having put to him your Category A which included a child with either unexpected and inconsistent or consistent with special concern in digoxin. You wouldn't be in a position to disagree with that assessment?

A. I am sorry. We based our findings on what our consultants -- the advice our consultants gave us as far as their presence at these cases. If you wanted to go back and redefine Category A you could do that. I don't think that conclusions we reached would be substantially different.

Q. Why did you choose the wider category rather than the narrower one that would have come from a combination of all of these factors?

A. We -- that was simply a choice



EE11

1

2

(ANSWERS BY DR. BUEHLER)

3

that we made. We wanted to define broad categories
4 as I believe I said this morning, using any of the
5 extreme -- any one of the extreme criteria provided
6 by our consultants.

6

7

Q. But if the categories were
7 in narrower, the results might indeed be different.

8

9

10

11

12

A. Some of the results might
be different but I believe if you narrowed -- you
could juggle those categories any way you want. The
findings on the last page of Table 11 would not
change because that table is made irrespective of
categories.

13

14

15

16

17

Q. Except that you told Mr.
Lamek yesterday that even within your Category A
Dr. Kauffman's numerical digoxin score was a stronger
digoxin indicator than Dr. Nadaš' clinical
impression.

18

19

MR. LAMEK: I don't recall that
being said.

20

21

THE COMMISSIONER: I'm sorry, what
was that again?

22

23

24

25

MR. KNAZAN: Mr. Lamek asked him
whether there wasn't a distinction between the two
types of findings that would bring a baby within



1

2

(ANSWERS BY DR. BUEHLER)

3

Category A: Dr. Kauffman's numerical score and
4 Dr. Nadas' clinical impression, and the witness
5 agreed with him.

5

6

A. Can you give --

7

MR. LAMEK: The page?

8

THE COMMISSIONER: I don't under-
stand it yet but perhaps if you give us the
9 reference.

10

MR. KNAZAN: Yes.

11

12

MR. LAMEK: Perhaps page 321,
Mr. Commissioner. I think the passage that my
friend is referring to is a rather long question
13 at the beginning of line 15 where I was talking
14 about the components of criteria for inclusion in
15 Category A and said:

16

17

18

19

20

21

22

23

24

25

"And therefore inclusion in Category
A may reflect a score of 3 or greater
than 3 on the 1 to 5 digoxin scale
of Dr. Kauffman, and having heard
his evidence I think it is fair to
say he regards those as fairly
compelling cases of digoxin intoxi-
cation related deaths, or it may
merely indicate that the timing of
death was considered to be unexpected



EE13

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

and..."

I should have said "inconsistent with clinical status." That there was a value judgment in rating those as more or less compelling circumstances would be implicit in the question.

THE COMMISSIONER: That is on page 13 -- isn't that just another way of putting what they said the tests were on page 30?

MR. LAMEK: Yes.

MR. KNAZAN: 322.

THE COMMISSIONER: What is your problem?

MR. KNAZAN: 322, line 9, Mr. Lamek calls it a "rather less compelling criteria than the 4 or 5..."

THE COMMISSIONER: Than the which?

MR. LAMEK: He said it is certainly very different.

THE COMMISSIONER: Less compelling criteria. He meant a less compelling criterion I am sure.

MR. LAMEK: That is right. I am sure that is what I said.

THE COMMISSIONER: "4 or 5 rating on



EE14

1

2

(ANSWERS BY DR. BUEHLER)

3

Kauffman scale".

4

5

6

MR. LAMEK: Dr. Buehler doesn't
accept necessarily my rating of more or less
compelling. He merely acknowledges "very different".

7

8

MR. KNAZAN: Fair enough. Perhaps
I will leave it, Mr. Lamek, and just try to get to it
another way.

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

THE COMMISSIONER: All right.

MR. KNAZAN: Q. If you tighten
categories down enough your conclusions would be
dramatically changed because if you reach the
result that there were only three suspicious deaths
and yet ten people were on the wards for
all of those deaths, it would be a very different
conclusion?

A. I think if you were going to
tighten the categories, the logical way to do that
would be to take the 18 Category A deaths, and
this is the sequence we went through. Of those
18 we said there were 7 that had a score of 3 or
greater. Of those 7 there were 4 who had digoxin
present in post mortem tissues having never been
prescribed digoxin, and I think that 4 would be as
far as you would go unless you wanted to go so far as



ANGUS, STONEHOUSE & CO. LTD.
TORONTO, ONTARIO

Smith, Buehler
Wallace, Kusiak
cr.ex. (Knazan)

595

EE15

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25

(ANSWERS BY DR. BUEHLER)

to say how many infants did Dr. Kauffman give the
highest score to. He gave that highest score to
one infant.



FF
/PS

1

2

(ANSWERS BY DR. BUEHLER:)

3

4

5

6

7

Q. That is precisely what I was getting at, Doctor, I was attempting to see if you could be of assistance to this Commission, given all the evidence which may lead to a different conclusion than the combination of Dr. Nadas' and Dr. Kauffman's assessment.

8

9

10

Now, yesterday Mr. Lamek, I believe, suggested to you that your findings at the end of your discussion -- excuse me.

11

12

A. Are you reading from the testimony.

13

14

15

Q. Yes, your discussion on page 27.

16

17

18

19

A. So you are reading from the report, not the testimony.

20

21

Q. From your report, yes. During part of this discussion it was suggested to you it was not necessarily restricted to an epidemiologic discussion and you agreed with that, you said you approached it from an epidemiologic perspective.

22

23

24

25

A. Which part of the discussion are you referring to in particular?

Q. The analysis of the data at the bottom of the long full paragraph:



(ANSWERS BY DR. BUEHLER:)

"Although these observations suggest that some infants died as a result of intentional administration of digoxin overdoses, it is not possible from this investigation alone to make this determination conclusively."

And then you go on to very fairly assess the evidence in relation to intentional acts. You say what would have to be explained in those circumstances as well.

A. Yes, I think if you read that paragraph that begins on page 27, at the bottom, and it begins with the words:

"If the epidemic was..."

Should I have said were:

"If the epidemic were the result of intentional acts..."

So the rest of that paragraph is based on that conditional statement.

"Because the epidemic went unrecognized for almost nine months, suggesting that the perpetrator had enough clinical knowledge to choose victims whose deaths would not initially be considered suspicious."



(ANSWERS BY DR. BUEHLER:)

I think again when you look at that sentence you need to precede it with a phrase which begins with "If."

Q. I accept that for all the sentences.

A. And I believe that the word cause there was an unfortunate choice of words.

THE COMMISSIONER: I want to say to you, Doctor, if it is of any consolation to you, I think "was" was correct.

THE WITNESS: Thank you.

THE COMMISSIONER: "Were" is if I were you or if I were king, which indicates that there is no possibility of it being so, but you are not saying there is no possibility here, you are just wondering whether there is a possibility and that has absolutely nothing to do with this case. I just wanted to set your mind at rest, if you thought you had been accused of an error in grammar.

Q. I'm not even quibbling with the word, "cause" in the next sentence, and I accept that all of these are prefaced by the assumption that if this is the explanation and you go on:

"The perpetrator would also need to have been a person who had



1 (ANSWERS BY DR. BUEHLER:)

2 unlimited access to patients over
3 a nine month period. Neither the
4 presence of such a person in a patient
5 room, if observed, nor the hours of
6 his or her handling an IV line during
7 night-time hours would arouse sus-
8 picion."

9 Now, in your study did you make a distinction between
10 registered nurses and registered nursing assistants,
11 did you ever hear that distinction?

12 A. Yes, we are aware of that
13 distinction.

14 Q. And it was ignored, I assume,
15 when making the initial study which resulted in
16 Table 11.

17 A. We did not distinguish between
18 different levels of nurses.

19 Q. But then coming to the end and
20 having this discussion of your conclusions, would you
21 agree that if there was evidence that the handling
22 of an IV line during night-time hours would arouse
23 suspicion by any of the nurses listed in Table 11,
24 then that association might have to be recalculated
25 in terms of interpreting it for significance.

A. I believe you are referring to



(ANSWERS BY DR. BUEHLER:)

the statement we made early in our report in terms of background information, that in general the RNA did not administer IV medications.

Q. You actually said nurses didn't administer IV medications.

A. I am sorry.

Q. I don't think you ever referred to RNA's.

A. Okay. Excuse me, let me check exactly what we said there.

Q. Page 4, under "Patient Care."

A. Okay.

"Except for antibiotics which are injected into a chamber in the IV line, nurses are not allowed to administer IV medication; ...such doses are given by physicians. However, all IV additives, such as electrolyte supplements, are prepared and administered by the nurses."

Q. Yes. But at no time did you address your mind to whether or not an RNA giving a medication by IV would arouse suspicion.

A. In terms of the construction of



(ANSWERS BY DR. BUEHLER:)

that table we included RN's and RNA's.

Q. My only question is, and maybe any one of you can answer that in interpreting, and I am only interested in 404, everyone else is formidably represented.

A. Yes.

Q. In interpreting these statistics, if you were then advised that Nurse 404, or 704, or whoever it might be handling an IV would greatly arouse suspicion, would you agree with me that the significance of relative risk to that nurse would be even less given your discussion on page 28.

A. I would hate to link -- I would hate to add one speculation to another and attach that to our relative risk estimate. If there is any section of the report that I would describe as speculative it is that paragraph that begins with those words:

"If the epidemic was the result of intentional acts..."

MR. KNAZAN: Thank you.

THE COMMISSIONER: Thank you, Mr.

Knazan.

Mr. Olah.



(ANSWERS BY DR. BUEHLER:)

CROSS-EXAMINATION BY MR. OLAH:

Q. Dr. Buehler, I would take the liberty of addressing you, sir, and if any members of the team wish to add or subtract, or modify I would be grateful in terms of responses.

My name is John Olah and I act on behalf of one of the registered nursing assistants on the Trayner team, a lady by the name of Janet Brownless.

I just want to be clear about something. If I understand the study of epidemiology, as a lay person, one of the first things that an epidemiologist does is to ascertain if there is an epidemic.

A. That is correct, we mentioned that yesterday.

Q. And I take it that you concluded that in this case during the period in question, namely July 1, 1980 to March 31, 1981, it was your view that there was an epidemic.

A. There was certainly a sharp increase in death rate, yes, that is correct.

Q. That was an epidemic.

A. Yes.



(ANSWERS BY DR. BUEHLER:)

Q. And so then your task --

A. As we would define it.

Q. As you would define it in what terms?

A. Which may be different from lay terms.

Q. All right. Your task then there after was to see if you could determine some sort of causal relationship, or a causal nexus as to what led to the epidemic.

A. Epidemiologists in general look for associations.

Q. All right.

A. There is a difference between association and cause.

Q. All right. Can you for my purposes explain what that distinction is? I take it you may not be able to go this far as to say that there is a causal nexus, but only an association.

A. That is correct.

Q. And that is in effect what you concluded in this case.

A. We observed associations.



(ANSWERS BY DR. BUEHLER:)

Q. That is correct. The way you tried to -- but you really do look and attempt to look for a causal nexus or a cause, do you not, isn't that what the ultimate objective of the exercise is?

A. Well, I think by analogy I can say that our investigation looked for associations; the purpose of this Commission is to look for a cause.

Q. Well, in order to make recommendations in any kind of an epidemiological study, are you not looking for a cause so that people then can take preventive steps by eliminating that cause, isn't that what the fundamental purpose is?

A. I would agree with you except I would insert the word, "association." into that phrase.

Q. And in this case, as in any other case, what you attempted to do is to eliminate any causal factors, or associated factors that you can rule out.

A. We look for both positive associations and no associations, possibly negative associations and draw a conclusion from that.

Q. So that you have two means of



10 1 (ANSWERS BY DR. BUEHLER:)

2 testing ultimate conclusion, one is by exclusion
3 and the other is by finding a direct association.

4 A. I would not use the word
5 "direct". I would use the word "association".

6 Q. "Association", all right. So
7 you took steps to see if you could exclude certain
8 factors in this case, did you not?

9 A. Yes, we looked for different,
10 possible changes in the ward environment and the
11 type of care given that might offer an insight into
12 why the increase occurred.

13 Q. And as I understand the bottom
14 line of the report, the major association you could
15 find was in terms of personnel.

16 A. I think there were several
17 major findings, one is an increase in the death
18 rate occurred, another is --

19 Q. Hold on, hold on, that is the
20 finding, that there was an epidemic?

21 A. Yes. Given that I think we
22 would say that it was -- if you look at several of
23 the major findings I think a major finding would be
24 the occurrence of deaths between midnight and 6 a.m.

25 Q. That put a handle as to when



11 1
2 (ANSWERS BY DR. BUEHLER:)

3 the epidemic was occurring?

4 A. Yes.

5 Q. But we are looking now for
6 causal or associated factors, what were the major
7 findings in that regard?

8 A. That everything that we are
9 dealing with is something that is associated or not
10 associated, but the next thing I was getting to was
11 that we did observe an association between a particular
12 member of the nursing staff and the number of
13 deaths.

14 Q. Now, I take it that somewhere
15 along the way I think you said you became concerned
16 about some sort of an association of that kind, that
17 is, administration of large doses of digoxin and
18 the epidemic. I think you said yesterday to Mr.
19 Lamek.

20 A. There was a stage in the
21 investigation when we decided to address that issue,
22 were there associations between deaths and
23 hospital personnel.

24 Q. And in fact you came to the
25 conclusion with respect to that aspect of your
study.



(ANSWERS BY DR. BUEHLER:)

A. Yes.

Q. You came to a conclusion?

A. Yes, we did observe such an
association.

Q. And your conclusion at page 27
in this regard, as I understood it, was:

"Although these observations suggest
some infants died as a result of
intentional administration of digoxin
overdoses, it is not possible from
this investigation alone to make this
determination conclusively."

A. Correct.

Q. In other words you found an
association but you couldn't be totally conclusive
about it.

A. That is correct.

Q. Now, in order to go one step
further.

THE COMMISSIONER: That is not the way
I would read it, I know you got an agreement:

"Although these observations suggest
some infants died as a result of
intentional administration of digoxin



13 2 (ANSWERS BY DR. BUEHLER:)

3 overdoses,..."

4 That is what he is not prepared to be conclusive
5 about, I thought:

6 "...to make this determination
7 conclusively."

8 It is not the association, it is not the identity of
9 the administrator, it may not be -- it may be another
10 thing. What you are saying there, it seems to me,
11 and I may be wrong, is that you cannot from this
12 investigation conclude that the infants died as a
13 result from an intentional administration of digoxin
14 overdose, isn't that right, isn't that what you are
15 saying?



1

2

GG/BM/ak

3

DR. BUEHLER: Yes. I'm not certain
what the ambiguity is.

4

5

6

7

MR. OLAH: Q. Well, as I understand
it your suggestion is that there is a suggestion
but there is no conclusive decision or proof that
you could reach.

8

9

10

THE COMMISSIONER: It is the end
of the day but I thought you were confusing the
identity of the administrator with the fact of the
intentional administration.

11

12

13

MR. OLAH: If that's the case --

THE COMMISSIONER: Don't go at it

any more as long as you can sort it out.

14

15

16

17

18

19

MR. OLAH: Right.

Q. The point I was really trying
to drive at is this, Doctor, that once you reached
this conclusion that is outlined on page 27 you then
went one step further and tried to identify the
person who may have been involved in this administra-
tion.

20

(ANSWERS BY DR. BUEHLER)

21

22

23

A. We attempted to identify
whether or not there were associations between
Hospital personnel and deaths.

24

25

Q. All right. By association



GG2

1

2

(ANSWERS BY DR. BUEHLER)

3

4

aren't you essentially saying the same thing, the
person who may have in fact been the administrator.

5

Are we not talking about the same thing?

6

7

8

A. Clearly if there were someone
who administered overdoses of digoxin, either
intentionally or accidentally, by definition that
person would be associated with those events.

9

10

11

12

Q. All right. Now, I'd like to
turn you to page 20 of your report. Under the
Section B results in the second major paragraph
about half way down you say:

13

14

15

16

17

18

19

20

"The relative risk for the onset of
a terminal event occurring within
four hours of a nurse's presence on
the ward is shown in Table 11 for the
12 nurses associated with the greatest
number of Category A deaths."

21

22

23

The question that arose from that
is, why were 12 nurses selected for the purposes of
that particular table?

24

25

A. I believe that was somewhat of
an arbitrary decision. We could have picked slightly
fewer.

THE COMMISSIONER: The 12 most



GG3

1

2

(ANSWERS BY DR. BUEHLER)

3

associated, isn't that what it means?

4

5

MR. OLAH: Well, that was what I
was hoping the witness would say but he didn't say
it, Mr. Commissioner.

6

7

8

9

THE COMMISSIONER: Well, he didn't
have to as far as I am concerned because that is
what I understood it to be. Could it mean anything
else?

10

11

12

DR. BUEHLER: The magnitude of
the relative risk is an indicator of the degree
of association.

13

14

15

16

THE COMMISSIONER: No, but I take
it that anybody else that you didn't include in the
table was less associated than the 12 you did, isn't
that right?

17

18

19

20

21

DR. BUEHLER: Yes, yes.

THE COMMISSIONER: All right.

MR. OLAH: Q. In fact, I suggest
to you, Doctor, that anyone who wasn't included in
that table didn't have a meaningful association and
that's why you didn't put them on Table 11?

22

23

24

25

A. Let me refer to the table for
just a moment. I believe the previous question made
the point that a relative risk greater than one,



GG4

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

or a relative risk with confidence that is outside the range of one is an indication of an association. So, clearly, there may have been people with smaller associations but it would still be an association. I think the point is that the magnitude of the relative risk is an indicator of the degree of association. So that if someone had a smaller relative risk estimate they would have a slightly lesser degree of association.

Q. Well, the point I am making is anyone who is off this table presumably didn't have a meaningful association and that is why they weren't included.

A. I am now reluctant to accept your word "meaningful". Anyone who is off this table would have a lesser degree of association.

Q. Well, would you agree with me that anyone off the table would have a weak relative risk of association?

THE COMMISSIONER: Would you just say less strong?

MR. OLAH: Less strong.

THE COMMISSIONER: Would you just say less strong instead of weak and you will get



GG5
1
2 (ANSWERS BY DR. BUEHLER)

3 an affirmative answer. If you say weak I doubt if
4 you will get an answer at all.

5 MR. OLAH: Q. Well, let's just
6 see if we can...

7 THE COMMISSIONER: Strong would be
8 pretty strong for me.

9 MR. OLAH: Q. Well, would you
10 agree with the Commissioner's assessment then,
11 Doctor, that it is less strong?

12 A. Yes.

13 Q. All right. Now that we have
14 got that accomplished. I thought you said earlier
15 today, this afternoon, that a relative risk factor
16 of 2 or less was considered weak.

17 A. Let me direct that question
18 to Mr. Kusiak.

19 (ANSWERS BY MR. KUSIAK)

20 A. I think the answer to that
21 was in a comment that was contained in Dr. Haynes'
22 criticism that epidemiologists usually classify
23 relative risks as weak if they are around 2 and
24 moderate if they are around 5 and very strong if
25 they are 10 or greater. So, that is the customary
sort of thing.



GG6

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY MR. KUSIAK)

Q. Are you in agreement with that assessment?

A. Well, more or less. I think nowadays - I should have added this at the time - but nowadays it is possible to conduct large scale studies where even a relative risk of 1.5 or 2 is meaningful in terms of public health. However, in this sort of study where the numbers are relatively small that that is probably an applicable classification.

THE COMMISSIONER: You said 2 is weak, 5 was what?

MR. KUSIAK: Moderate.

THE COMMISSIONER: And 10 was strong, is that right?

MR. KUSIAK: 10 was strong.

DR. BUEHLER: May I ask you a question?

MR. OLAH: Q. I am not under oath.

(ANSWERS BY DR. BUEHLER)

A. Is your client one of these 12?

Q. No, she is not and that is the point I am trying to make.

THE COMMISSIONER: There are some



Smith, Buehler,
Wallace, Kusiak,
cr.ex. (Olah)

GG7

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

people who would have left the whole matter alone
in those circumstances.

MR. OLAH: Q. I'd like to turn
then to Table 9 and Table 10, for a moment,
Doctor. I know that 401 to 404 is the Trayner team.
Am I correct in understanding that 704 and all
members with the 700 digit are 4B nurses?

(ANSWERS BY DR. SMITH)

A. That is correct, yes.

Q. And nurses with the 5 series
are, what, are they another team on 4A or another
team on 4B?

A. We attempted to put some
meaning to the digits and these digits were assigned
initially to the group of nurses that we encountered
more often. However, we quickly realized that with
the total number of nurses existing passing through
the ward we had to really not give any pattern of
numbers. The original reason for giving a certain
series of codes to certain nurses was to try to
read printouts a little bit more easily to identify
teams.

Q. So, am I correct in ---

A. So, I would have to go back
to the original coding identification to answer your



GG8

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. SMITH)

question. I think as a rule, yes, those were the codes given by teams but there may be exceptions later on.

Q. So, am I correct in reading that my client who is numbered 405 is on for less numbers of deaths either in Category A, B or C than many members of the 4B team and some other members of the 4A team other than the Trayner team?

A. Well, are we referring to Table 9 now?

Q. Table 9 or Table 10.

A. Well, that is as it is shown.

Q. That is the case?

A. Yes.

Q. Now, with respect to Table 12 I think you said that the reason that those four particular cases were included in Table 12 was because they were the only cases at which a time estimate could be arrived at by the consulting pharmacologist?

(ANSWERS BY DR. BUEHLER)

A. Those are the four cases where, to our understanding, Dr. Kauffman used the digoxin data to attempt to estimate an approximate time with



(ANSWERS BY DR. BUEHLER)

which digoxin and a digoxin overdose may have been administered.

Q. I understood from you earlier, Doctor, when you were giving evidence that in fact there was some sort of a time assessment arrived at in the case of Belanger.

A. There was a time assessment arrived at in two other patients; one was based on, one of Dr. Kauffman's assessments was based on the time that a child transferred from the ICU to the ward and he said if it were given on the ward then it would have been given within a certain length of time. The other assessment was if the overdose were given at the Hospital then it would have been within a certain number of hours.

Q. Why was the Belanger child not included in Table 12?

A. Well, the Belanger child was a child who Dr. Kauffman estimated I believe it was an approximate time of five hours. Let me just check that briefly.

Q. Well, I can help you. Exhibit 272.

MR. KNAZAN: Mr. Commissioner, I don't want the witness to get into trouble. I was



Smith, Buehler,
Wallace, Kusiak,
Cr.ex. (Olah)

GG10

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

the one who said it was Belanger five hours, not
the witness.

MR. OLAH: Q. Well, it is Tab 24
which is the comments of Dr. Kauffman, page 3, if
it was administered on 4B it would have to be
within five hours of death, cannot be more specific.
(ANSWERS BY DR. BUEHLER)

A. Yes.

A. (Dr. Smith) Yes.

Q. I'm just wondering why that
particular child was not included in Table 12?

A. Well, as I mentioned earlier,
Table 12 is the four children where Dr. Kauffman
was able to be more specific.

Q. You didn't feel that the five
hours were specific enough for your purposes?

A. Well, for the intent of Table
12, no. I think we also emphasized in another
section of the report that there were several
children in whom digoxin was present postmortem
but never prescribed; Belanger was one of those
children.

MR. OLAH: Mr. Commissioner, I
notice it is 4:30. Did you wish me to stop at this
moment?



Smith, Buehler,
Wallace, Kusiak,
cr.ex. (Olah)

GG11

1
2
3 THE COMMISSIONER: How long do you
4 expect to be?

5 MR. OLAH: I will be very brief
6 tomorrow, about 10 minutes.

7 THE COMMISSIONER: Well, how about
8 being brief now.

9 MR. OLAH: Well, that's why I asked.

10 THE COMMISSIONER: You can conclude
11 it now.

12 MR. OLAH: I'm sure I can.

13 Q. The previous examiner talked
14 to you about the remarks you made commencing at the
15 bottom of page 27 and the top of page 28. You talked
16 about the underlying premise of that operating
17 behind the remarks in the paragraph on the top of
18 page 28. I take it that assuming that there was
19 a deliberate overdose of digoxin administered
20 you tried to prepare some sort of a profile of
21 the possible perpetrator. That's what the function
22 of that paragraph was?

23 (ANSWERS BY DR. BUEHLAH)

24 A. Yes, that paragraph is
25 speculative based on the assumption if the epidemic
was the result of intentional acts.

Q. But it was intended, given



GG12

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

(ANSWERS BY DR. BUEHLER)

that assumption, to be a profile of the possible perpetrator?

A. Yes.

Q. And the factors outlined in it, as has been indicated, is that that person must have had sufficient knowledge of cardiology to be able to choose victims whose deaths would not initially be considered suspicious. That was one of the factors that you felt would be common?

A. We didn't use the word cardiology, we used the word clinical knowledge.

Q. All right. You talked about cardiac pathology sufficient to explain death. In other words, that person had to be fairly knowledgeable about cardiology to go undetected for a period of nine months?

A. I think that person would have to have some clinical knowledge. I don't think that person would need to be a cardiac pathologist if we were going to allow speculation.

Q. No, but I take it that that person would have to know a fair amount about cardiology and cardiac pathology?

A. A lot of attention seems to



GG13

(ANSWERS BY DR. BUEHLER)

be directed to this particular paragraph. It was speculative.

Q. Well, I understand the reservation.

A. And you are asking me to speculate a little more.

Q. I understand the reservations you are putting on it but I take it that what you meant to imply there was that the person in question, assuming the assumption we have discussed, had to have some knowledge of cardiology?

A. I would not say cardiology, we said clinical knowledge.

Q. All right. Did you ever consider whether an RNA would have that kind of knowledge, in your view?

A. We have speculated on a profile. I wouldn't care to offer judgment as to the relative competence of an RNA as opposed to an RN in having some clinical familiarity with the types of patients that he or she is dealing with.

Q. All right. But one of the other factors that has been brought to your attention is the handling of an IV line during the



G14

1

2

(ANSWERS BY DR. BUEHLER)

3

nighttime hours and whether that would be suspicious.

4

Did you ever consider as a factor in the profile

5

that the person in question would have to have

6

access to digoxin and to some mode of injecting

7

it intravenously?

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25



1

24jan84
HH
EMTrc

2

(ANSWERS BY DR. BUEHLER)

3

A. I think if there were someone

4

(again underlining the word 'if'). If someone

5

were intentionally administering overdoses of

6

digoxin, then that person would have to have access
to digoxin.

7

Q. And access to the mode of

8

injecting it intravenously; i.e. syringe?

9

A. If it was given IV.

10

Q. And just taking a speculation

11

perhaps one step further would you agree with me

12

that an RNA who has ostensibly no right to administer
digoxin, no right to administer intravenously,

13

would probably not fit that profile?

14

A. I am reluctant to continue

15

speculating.

16

Q. You would like to draw the

17

line at that point?

18

A. Yes.

19

MR. OLAH: Thank you. Those are
all the questions.

20

THE COMMISSIONER: Yes. All right.

21

Talking about speculation it would

22

be difficult to speculate how long we are going to

23

be tomorrow because none of the cross-examiners are

24

25



1
2 here. Have you any knowledge for us, Ms. Thomson?

3 MS. THOMSON: Yes, Mr. Commissioner.
4 At this stage judging by the cross-examination that
5 already preceded us I don't think we will be that
6 long. I would estimate somewhere between half an
7 hour and an hour.

8 THE COMMISSIONER: Yes. Have you
9 any idea about Mr. Sopinka?

10 MR. BROWN: I think we would be
11 about the same. If we do cross-examine we would
12 certainly be no more than half an hour or an hour.

13 THE COMMISSIONER: Now what about --
14 Mr. Percival is not available tomorrow or is he?

15 MR. YOUNG: He is not, Mr.
16 Commissioner.

17 THE COMMISSIONER: We will go right
18 on to the parents.

19 MR. YOUNG: This doesn't help my
20 cause, but Mr. Tobias informed me he might have no
21 questions, and I can't --

22 THE COMMISSIONER: No.

23 MR. Shanahan?

24 MR. SHANAHAN: I would be short if
25 I had any questions at all. I can say Mr. Tobias
was saying fifteen at the maximum if he had any,



HH3

1

2

and I would be in the same position. I can't tell
you about Mr. Shinehoft or Mr. Labow.

3

4

5

6

7

8

9

10

THE COMMISSIONER: Well, I think
you have to tell Mr. Percival that there is a
problem and he may have to transfer his expertise
to you. That fills you with horror.
We will convenience him as much as we can but if
we come to the noon hour and everybody is finished
except Mr. Lamek to go ahead, I will expect you
to carry on.

11

MR. YOUNG: Of course.

12

May I ask where Mr. Strathy will
be fitting in this?

13

14

15

THE COMMISSIONER: He is at the
end. He is at the end. Have you any thoughts on
it, Ms. Forster?

16

17

18

19

MS. FORSTER: No, sir. Mr. Strathy was
called to trial this morning and I don't think he
has put his mind to cross-examining in terms of
length.

20

21

22

THE COMMISSIONER: Well, there is
another real problem.

23

24

25

Ms. FORSTER: If he is not available
tomorrow I will be prepared to cross-examine.

THE COMMISSIONER: And have you any



HH4

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

thoughts if he is not available how long you will
be?

MS. FORSTER: I haven't put my mind
to it either.

THE COMMISSIONER: You are going to
have to go on before Mr. Strathy, that's all.

MR. YOUNG: My question was going
to be to Ms. Forster whether or not they have any
objection to preceding us.

MS. FORSTER: I certainly do.

THE COMMISSIONER: The answer is yes,
and she is supported by the Commissioner.

MR. YOUNG: That is pretty
persuasive support.

THE COMMISSIONER: All right. Till
ten o'clock tomorrow then.

--- whereupon the hearing was adjourned at 4:40 p.m.
until Wednesday, the 25th day of January 1984,
at 10:00 a.m.

